

*Dr. Blackman*

REPORT

OF THE

GOVERNMENT HOSPITAL FOR THE INSANE

TO THE

SECRETARY OF THE INTERIOR.

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1889.

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WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1889.



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OF THE

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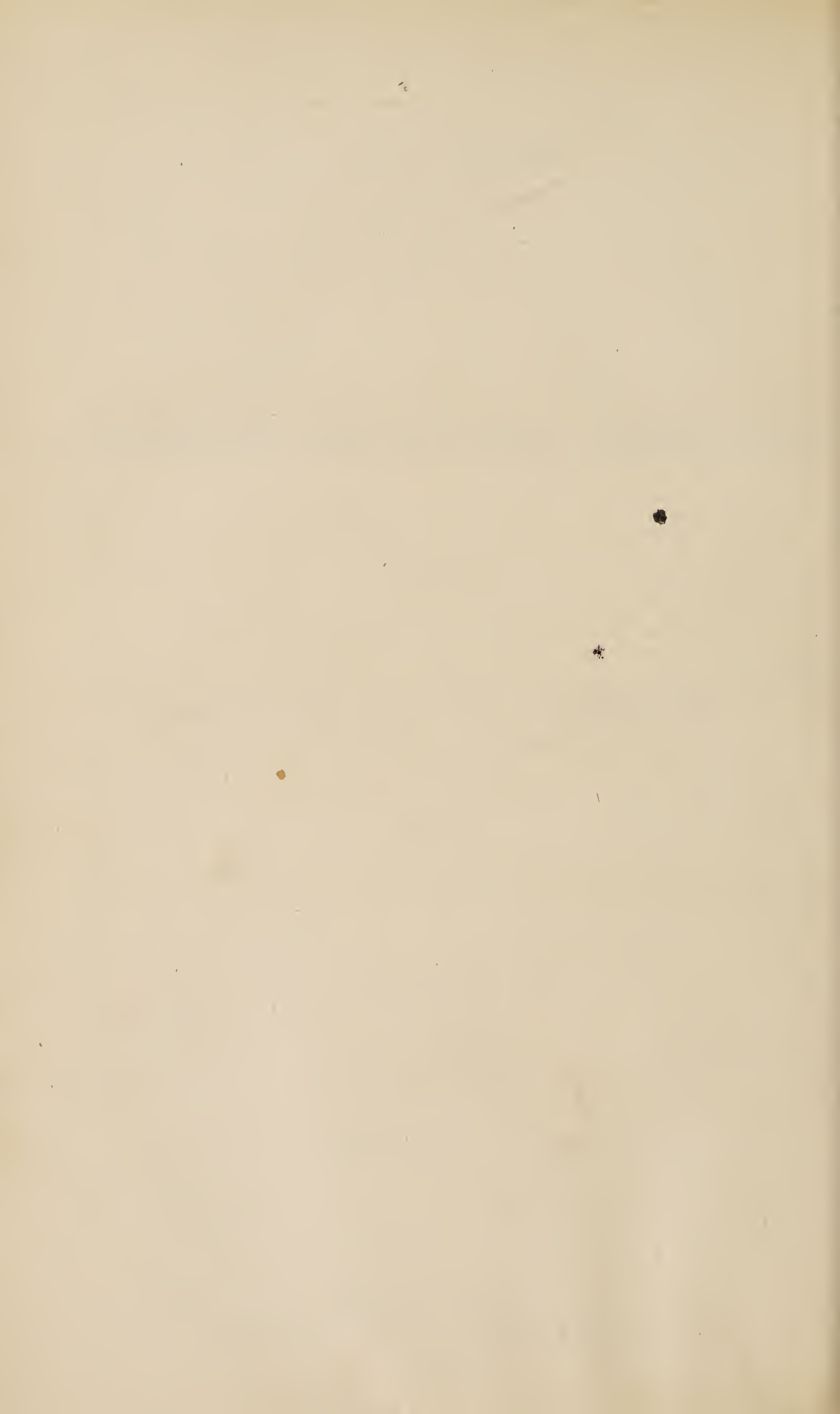
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REPORT  
OF THE  
BOARD OF VISITORS OF THE GOVERNMENT HOSPITAL  
FOR THE INSANE.

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OFFICERS OF THE HOSPITAL, JUNE 30, 1889.

VISITORS:

JOSEPH M. TONER, M. D.,  
*President of the Board.*  
JAMES C. WELLING, LL. D.  
Mrs. A. M. GANGEWER.  
Mrs. AMELIA J. ROWLAND.  
Hon. WILLIAM A. MAURY.

JOHN MOORE, M. D.,  
SURGEON-GENERAL, U. S. A.  
F. M. GUNNELL, M. D., U. S. N.  
Rev. BYRON SUNDERLAND, D. D.  
JOHN B. HAMILTON, M. D.,  
SURGEON-GENERAL, M. H. S.

EXECUTIVE COMMITTEE OF THE BOARD:

Messrs. TONER, GUNNELL, and MOORE.

CHAPLAINS:

Rev. JOHN CHESTER, D. D.  
Rev. A. FLORIDUS STEELE.  
Rev. WILLIAM E. PARSON.

Rev. THOMAS B. HUGHES.  
Rev. E. HERBERT RICHARDSON.

MEDICAL OFFICERS:

W. W. GODDING, M. D., *Superintendent and ex officio Secretary of Board of Visitors.*  
A. H. WITMER, M. D., *First Assistant Physician, in charge of Female Department.*  
M. J. STACK, M. D., *Second Assistant Physician, in charge of Male Department.*  
A. C. PATTERSON, M. D., *Third Assistant Physician and Chief Clerk.*  
J. C. SIMPSON, M. D., *Fourth Assistant Physician.*  
I. W. BLACKBURN, M. D., *Special Pathologist.*  
C. H. LATIMER, M. D., *Night Medical Inspector.*  
J. V. CALVER, D. D. S., *Dentist.*



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REPORT  
OF  
THE BOARD OF VISITORS.

GOVERNMENT HOSPITAL FOR THE INSANE,  
Washington, D. C., August 16, 1889.

SIR: The Board of Visitors have the honor to submit this, their thirty-fourth annual report, that for 1889.

The following tables give a condensed statement of the movements of population and the results of a year of hospital work:

SUMMARY.

	Males.	Females.	Total.
Remaining June 30, 1888.....	1, 029	332	1, 361
Admitted during the year ending June 30, 1889 .....	213	67	280
Whole number under treatment.....	1, 242	399	1, 641
DISCHARGED.			
Recovered .....	50	20	70
Improved .....	27	27	54
Unimproved .....	4	2	6
Died .....	86	28	114
Total discharged and died.....	167	77	244
Remaining June 30, 1889.....	1, 075	322	1, 397

Admissions and discharges.

		Males.		Females.		Totals.
REMAINING JUNE 30, 1888.						
Army.....	{ White ...	623	634	3	3	637
	{ Colored..	11		.....		
Navy .....	{ White ...	56	58			58
	{ Colored..	2				
Marine Hospital Service.....	{ White ...	14	16			16
	{ Colored..	2				
Civil life .....	{ White ...	233	321	238	329	650
	{ Colored..	88		91		
			1, 029		332	1, 361

Admissions and discharges—Continued.

		Males.		Females.		Total.	
ADMITTED DURING THE YEAR 1888-'89,							
Army .....	{ White ...	108	111			111	
	{ Colored..	3					
Navy .....	{ White ...	13	14			14	
	{ Colored..	1					
Marine Hospital Service.....	{ White ...	7	7			7	
	{ Colored..						
Civil life.....	{ White ...	57	81	43	67	148	280
	{ Colored..	24		24			
			213		67		
UNDER TREATMENT DURING THE YEAR.							
Army.....	{ White ...	731	745	3	3	748	
	{ Colored..	14					
Navy .....	{ White ...	69	72			72	
	{ Colored..	3					
Marine Hospital Service.....	{ White ...	21	23			23	
	{ Colored..	2					
Civil life.....	{ White ...	290	402	281	396	798	1,641
	{ Colored..	112		115			
			1,242		399		
DISCHARGED DURING THE YEAR—RECOVERED.							
Army .....	{ White ...	17	21			21	
	{ Colored..	4					
Navy .....	{ White ...	7	8			8	
	{ Colored..	1					
Marine Hospital Service.....	{ White ...	5	5			5	
	{ Colored..						
Civil life.....	{ White ...	14	16	15	20	36	70
	{ Colored..	2		5			
			50		20		
DISCHARGED DURING THE YEAR—IMPROVED.							
Army.....	{ White ...	16	16			16	
	{ Colored..						
Navy .....	{ White ...						
	{ Colored..						
Marine Hospital Service.....	{ White ...						
	{ Colored..						
Civil life .....	{ White ...	11	11	18	27	38	54
	{ Colored..			9			
			27		27		
DISCHARGED DURING THE YEAR--UNIMPROVED.							
Army.....	{ White ...	2	2			2	
	{ Colored..						
Navy .....	{ White ...						
	{ Colored..						
Marine Hospital Service .....	{ White ...						
	{ Colored..						
Civil life.....	{ White...	2	2	2	2	4	6
	{ Colored..						
			4		2		



*Admissions and discharges—Continued.*

				Males.		Females.			Total.	
DECREASED DURING THE YEAR.										
Army.....	{	White ...	58	58					58	
		Colored..								
Navy .....	{	White ...	2	2					2	
		Colored..								
Marine Hospital Service.....	{	White ...	2	2					2	
		Colored..								
Civil life.....	{	White ..	14	24	86	19	9	28	52	114
		Colored..	10							
REMAINING JUNE 30, 1889.										
Army.....	{	White ...	638	648		3		3	651	
		Colored..	10							
Navy .....	{	White ...	60	62					62	
		Colored..	2							
Marine Hospital Service.....	{	White ...	14	16					16	
		Colored..	2							
Civil life.....	{	White ...	249	349	1, 075	227	92	319	668	1, 397
		Colored..	100							
								322		

The patients from civil life remaining June 30, 1889, are classified as follows :

	Male.	Female.	Total.
District of Columbia—transient.....	43	20	63
District of Columbia—resident indigent.....	257	291	548
United States convicts and criminals.....	45	5	50
Private patients .....	4	3	7
Total.....	349	319	668

*Monthly changes of population.*

Date.	Admitted.			Discharged.						
	Males.	Females.	Total.	Males.	Females.	Total.	Died.			Total discharges, including deaths.
							Males.	Females.	Total.	
July, 1888.....	16	15	31	8	15	23	5	4	9	32
August, 1888.....	16	10	26	7	7	14	10	1	11	25
September, 1888.....	29	3	32	.....	3	3	7	2	9	12
October, 1888.....	31	4	35	6	4	10	3	3	6	16
November, 1888.....	6	8	14	14	1	15	14	1	15	30
December, 1888.....	15	5	20	15	6	21	5	1	6	27
January, 1889.....	12	4	16	2	3	5	9	2	11	16
February, 1889.....	8	6	14	4	1	5	8	2	10	15
March, 1889.....	39	2	41	4	4	8	5	3	8	16
April, 1889.....	18	4	22	4	3	7	4	5	9	16
May, 1889.....	14	6	20	9	.....	9	9	2	11	20
June, 1889.....	9	.....	9	8	2	10	7	2	9	19
Total.....	213	67	280	81	49	130	86	28	114	244

Cause of death.

Apoplexy .....		General paralysis, with gastritis .....	1
Apoplexy, hemorrhagic .....	5	Gangrene, pulmonary .....	1
Apoplexy, with organic disease of brain .....	3	Gangrene, senile .....	2
Bright's disease, chronic .....	2	Maniacal exhaustion .....	1
Bronchitis .....	1	Organic disease of brain .....	6
Bronchitis, chronic, with cardiac atrophy .....	1	Organic disease of brain, with pneumonia .....	1
Bronchitis, chronic, with diarrhœa ..	1	Organic disease of brain, with bulbar paralysis .....	3
Carcinoma .....	6	Paralysis, bulbar .....	1
Cardiac valvular disease .....	5	Peritonitis .....	3
Dysentery, with abscess of liver .....	1	Phthisis .....	23
Epileptic convulsions .....	3	Pneumonia .....	2
Epileptiform convulsions .....	3	Pulmonary congestion .....	3
Exhaustion and inanition .....	5	Peri-nephritic abscess with pyæmia ..	1
Empyema .....	1	Senectus .....	4
Fever, pernicious remittent .....	1	Senectus with diarrhœa .....	2
Fever, typho-malarial .....	1	Senectus with organic disease of brain .....	5
General paralysis .....	2	Suicide (drowning) .....	1
General paralysis with bulbar paralysis .....	2	Ulceration of gall-bladder with acute peri-hepatitis .....	1
General paralysis with diarrhœa .....	1		
General paralysis with epileptiform convulsions .....	5	Total .....	114
General paralysis with exhaustion ..	3		

Duration of the mental disease on admission of those who recovered.

Under 10 days .....	10	Between 8 and 10 months .....	1
Between 10 and 20 days .....	8	Between 1 and 2 years .....	2
Between 20 and 30 days .....	2	Between 3 and 4 years .....	2
Between 1 and 2 months .....	22	Between 4 and 5 years .....	1
Between 2 and 3 months .....	5	Between 9 and 10 years .....	1
Between 3 and 4 months .....	10		
Between 4 and 5 months .....	2	Total .....	70
Between 6 and 8 months .....	4		

Duration of mental disease of those who died.

One month .....	1	Twelve years .....	5
Three months .....	1	Thirteen years .....	5
Four months .....	1	Fifteen years .....	1
Six months .....	5	Sixteen years .....	2
Nine months .....	3	Seventeen years .....	3
Ten months .....	1	Eighteen years .....	1
One year .....	16	Twenty years .....	3
Two years .....	23	Twenty-one years .....	1
Three years .....	10	Twenty-two years .....	2
Four years .....	4	Twenty-three years .....	2
Five years .....	4	Twenty-six years .....	2
Six years .....	3	Twenty-seven years .....	1
Seven years .....	3	Thirty years .....	1
Eight years .....	2	Unknown .....	1
Nine years .....	3		
Ten years .....	1	Total .....	114
Eleven years .....	3		

Duration of disease on admission.

		Males.			Females.			Totals.						
LESS THAN SIX MONTHS.														
Army .....	{ White...	23	24	74	18	29	29	24	103					
	{ Colored..	1												
Navy .....	{ White...	5	6					6						
	{ Colored..	1												
Marine Hospital Service.....	{ White ..	6	6					6						
	{ Colored..	.....												
Civil life .....	{ White ..	27	38					67						
	{ Colored..	11												
LESS THAN ONE YEAR.														
Army .....	{ White...	6	6	12	6	7	7	6	19					
	{ Colored..	.....												
Navy .....	{ White...	.....	6					13						
	{ Colored..	.....												
Marine Hospital Service.....	{ White...	.....	6					13						
	{ Colored..	.....												
Civil life .....	{ White...	4	6					13						
	{ Colored..	2												
ONE TO TWO YEARS.														
Army .....	{ White...	34	35	57	7	11	11	35	68					
	{ Colored..	1												
Navy .....	{ White...	5	5					5						
	{ Colored..	.....												
Marine Hospital Service .....	{ White...	1	1					1						
	{ Colored..	.....												
Civil life .....	{ White...	12	16					27						
	{ Colored..	4												
OVER TWO YEARS.														
Army .....	{ White...	18	18	22				18	22					
	{ Colored..	.....												
Navy .....	{ White...	.....	4					4						
	{ Colored..	.....												
Marine Hospital Service.....	{ White...	4	4					4						
	{ Colored..	.....												
Civil life .....	{ White...	.....	4					4						
	{ Colored..	.....												
OVER THREE YEARS.														
Army .....	{ White...	5	6	11	2	3	3	6	14					
	{ Colored..	1												
Navy .....	{ White...	2	2					2						
	{ Colored..	.....												
Marine Hospital Service.....	{ White...	.....	3					6						
	{ Colored..	.....												
Civil life.....	{ White...	3	3					6						
	{ Colored..	.....												



Duration of disease on admission—Continued.

		Males.			Females.			Total.	
OVER FOUR YEARS.									
Army .....	{ White...	6	6					6	
	{ Colored..								
Navy .....	{ White...								
	{ Colored..								
Marine Hospital Service .....	{ White...								
	{ Colored..								
Civil life.....	{ White ..	1	1	7				1	7
	{ Colored..								
FIVE TO TEN YEARS.									
Army.....	{ White...	7	7					7	
	{ Colored..								
Navy .....	{ White...								
	{ Colored..								
Marine Hospital Service.....	{ White...								
	{ Colored..								
Civil life.....	{ White...	1	5	12	3	3	3	8	15
	{ Colored..	4							
TEN TO TWENTY YEARS.									
Army.....	{ White...	2	2					2	
	{ Colored..								
Navy .....	{ White...	1	1					1	
	{ Colored..								
Marine Hospital Service.....	{ White...								
	{ Colored..								
Civil life.....	{ White...	5	8	11	5	8	8	16	19
	{ Colored..	3							
OVER TWENTY YEARS.									
Army.....	{ White...	7	7					7	
	{ Colored..								
Navy .....	{ White...								
	{ Colored..								
Marine Hospital Service.....	{ White...								
	{ Colored..								
Civil life.....	{ White...			7	2	4	4	4	11
	{ Colored..								
UNKNOWN.									
Army.....	{ White...								
	{ Colored..								
Navy .....	{ White...								
	{ Colored..								
Marine Hospital Service.....	{ White...								
	{ Colored..								
Civil life.....	{ White...				2	2	2	2	2
	{ Colored..								

Table showing the nativity as far as could be ascertained of the 7,511 cases treated.

Native born.		Foreign born.	
	Number.		Number.
District of Columbia.....	900	Ireland .....	1, 416
New York .....	527	Germany ... ..	953
Maryland .....	565	England .....	168
Virginia .....	637	France .....	65
Pennsylvania.....	404	Canada .....	59
Ohio .....	228	Scotland .....	62
Massachusetts.....	168	Switzerland .....	29
Maine .....	82	Italy.....	29
Illinois .....	73	Denmark .....	21
Connecticut .....	58	Norway .....	14
New Hampshire .....	59	Sweden .....	27
Indiana .....	65	Poland.....	14
Kentucky .....	55	Prussia.....	2
Michigan .....	42	Panama .....	1
New Jersey .....	66	Russia.....	13
Tennessee .....	33	Austria.....	15
Wisconsin.....	28	Nova Scotia .....	9
Vermont.....	35	Spain .....	4
Missouri.....	39	Holland.....	10
Rhode Island .....	24	Wales .....	6
Delaware .....	16	Portugal.....	4
North Carolina .....	28	Hungary .....	4
Alabama.....	13	Mexico .....	5
South Carolina.....	16	Saxony .....	6
Iowa.....	7	Malta.....	3
Georgia.....	18	Belgium .....	4
Mississippi .....	19	Buenos Ayres .....	1
Louisiana.....	10	Costa Rica.....	1
West Virginia .....	15	Bavaria.....	4
Kansas .....	3	Sicily.....	1
Florida .....	3	British Columbia .....	1
Texas.....	10	British Possessions .....	1
California.....	6	East Indies (British).....	5
Indian Territory .....	5	West Indies (British).....	6
Colorado.....	1	New Brunswick .....	2
Arkansas.....	3	Cuba .....	2
Montana.....	1	China .....	1
Oregon .....	1	Sandwich Islands .....	1
Minnesota .....	1	Coast of Africa .....	1
Total .....	4, 264	Cyprus .....	1
		Turkey.....	1
		Greece.....	1
		New Granada .....	1
		West Indies (Hayti).....	1
		Total .....	2, 975

Native born.....	4, 264
Foreign born .....	2, 975
Unknown.....	272
Total .....	7, 511

Form of disease in those admitted.

Disease.	Total last year.		Total.	Disease.	Total last year.		Total.
		Admitted during year.				Admitted during year.	
Mania, acute .....	2, 299	57	2, 356	Dipsomania .....	435	1	436
Mania, chronic .....	1, 239	37	1, 276	Kleptomania .....	4		4
Melancholia .....	1, 048	97	1, 145	Nymphomania.....	4		4
Dementia.....	1, 740	44	1, 784	Imbecility .....	90	5	95
Dementia, senile.....	162	24	186	Opium-eaters .....	19		19
Paresis .....	176	15	191	Idiocy .....	1		1
Typhomania (Bell's disease) .....	2		2	Not insane .....	11		11
Diffuse suppurative meningitis .....	1		1	Total .....	7, 231	280	7, 511

Tabular statement of the time of life at which the 7,511 cases treated since the opening of the institution became insane.

Age.	1888.	1889.	Total.
Under 10 years .....	155	11	166
Between 10 and 15 years.....	75	4	79
Between 15 and 20 years.....	408	8	416
Between 20 and 25 years.....	1,164	35	1,199
Between 25 and 30 years.....	1,314	36	1,350
Between 30 and 35 years.....	1,138	22	1,160
Between 35 and 40 years .....	842	23	865
Between 40 and 45 years.....	616	21	637
Between 45 and 50 years.....	447	40	487
Between 50 and 60 years.....	499	37	536
Between 60 and 70 years.....	277	32	309
Between 70 and 80 years.....	106	8	114
Between 80 and 90 years.....	14	1	15
Over 90 years .....	2		2
Unknown .....	163	2	165
Not insane .....	11		11
Total.....	7,231	280	7,511

Private patients.

	Male.	Female.	Total.
There were at the beginning of the year.....	5	4	9
Admitted during the year .....		1	1
Whole number under treatment.....	5	5	10
Discharged during the year .....	1	2	3
Remaining at end of year .....	4	3	7



Table showing the history of the annual admissions since the opening of the hospital, with the discharges and deaths, and the number for each year remaining June 30, 1889.

Years.	Admitted.			Of each year's discharged and died in 1889.												Total discharged and died of each year's admissions.												Remaining of each year's admissions June 30, 1889.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	New cases.		Relapsed cases.	Recovered.			Improved.			Unimproved.			Died.			Recovered.			Improved.			Unimproved.			Died.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	Male.	Female.		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Table showing admissions, discharges, and deaths, with the mean annual mortality and proportion of recoveries, per cent. of the discharges, including deaths, for each year since the opening of the hospital.

Years.	Admitted.			Discharged.						Remaining June 30 in each year.			Percentage of recoveries on discharges.			Percentage of deaths on average numbers.			Percentage of deaths on total numbers under treatment.		
	Admitted.			Improved.			Unimproved.			Died.			Total.			Male.			Female.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1885	26	37	63	3	3	6	1	1	2	5	3	8	26	34	60	19.35	20.65	40.00	100.00	100.00	100.00
1885-'56	36	11	47	5	2	7	3	3	6	8	3	11	54	39	93	41.20	37.98	79.18	33.33	35.71	7.09
1856-'57	25	27	52	4	4	8	7	3	10	8	8	16	59	50	109	54.55	42.80	97.35	25.00	16.66	14.66
1857-'58	29	14	43	1	2	3	2	1	3	7	6	13	65	52	117	57.70	50.31	108.01	41.66	51.42	12.13
1858-'59	47	18	65	1	4	5	5	3	8	6	4	10	84	54	138	72.93	56.24	129.17	31.25	47.73	8.22
1859-'60	68	24	92	2	7	9	3	2	5	13	5	18	106	61	167	100.68	59.00	159.68	41.17	52.38	12.91
1860-'61	64	31	95	4	5	9	2	2	4	12	7	19	109	72	181	109.76	64.81	174.57	55.55	65.43	10.80
1861-'62	174	12	186	14	1	15	1	1	2	26	10	36	147	65	212	123.75	65.74	189.49	42.10	67.09	21.01
1862-'63	330	25	355	17	1	18	3	3	6	57	4	61	203	76	279	168.41	72.31	240.72	42.85	70.45	33.84
1863-'64	484	25	509	69	1	70	5	5	74	67	8	75	264	86	350	295.73	77.66	283.39	66.66	65.75	32.56
1864-'65	478	36	514	110	12	122	11	11	22	139	8	147	167	93	260	277.42	83.81	361.23	54.78	53.64	50.10
1865-'66	194	28	222	20	7	27	10	1	11	41	12	53	186	96	282	190.92	90.70	281.62	59.42	54.50	21.47
1866-'67	88	21	109	45	7	52	11	1	12	19	14	33	188	92	280	189.06	89.46	279.12	52.32	46.85	10.02
1867-'68	120	33	153	49	15	64	6	2	8	22	5	27	226	102	328	221.17	96.44	317.61	59.75	60.95	9.95
1868-'69	133	35	168	59	11	70	8	2	10	24	9	33	259	109	368	244.55	108.03	352.58	59.00	54.69	9.81
1869-'70	146	36	182	32	8	40	16	6	22	15	3	18	331	123	454	294.69	108.08	402.77	43.24	36.37	41.67
1870-'71	161	34	195	50	12	62	21	7	28	33	11	44	384	124	508	354.34	121.66	476.00	46.30	36.36	43.97
1871-'72	142	44	186	43	8	51	16	13	29	37	7	44	422	139	561	407.21	131.57	538.78	41.34	27.59	38.34
1872-'73	153	51	204	49	15	64	23	5	28	32	13	45	468	152	620	431.03	144.11	575.14	45.70	39.47	44.13
1873-'74	192	38	230	67	12	79	22	8	30	39	11	50	526	156	682	492.44	151.36	643.80	50.00	35.29	47.02
1874-'75	179	51	230	66	9	75	28	22	36	51	7	58	552	166	718	536.46	164.17	700.63	43.13	21.95	38.66
1875-'76	166	47	213	67	17	84	26	10	36	48	18	66	576	168	744	564.78	165.59	730.37	47.18	37.78	45.45
1876-'77	147	51	198	66	17	83	27	13	40	45	7	52	583	182	765	587.41	176.30	763.71	47.80	45.94	46.89
1877-'78	138	44	182	49	11	60	32	9	41	37	9	46	600	193	793	596.82	184.37	781.19	40.49	33.33	38.96
1878-'79	169	53	222	68	24	92	30	7	37	51	12	63	617	202	819	619.10	196.70	815.80	44.73	54.54	46.93
1879-'80	181	44	225	38	14	52	23	3	33	46	13	59	691	206	897	655.34	196.63	851.97	35.51	35.00	35.37
1880-'81	161	62	223	62	10	72	27	6	36	63	18	81	700	225	925	685.37	211.38	896.75	40.78	23.25	36.92
1881-'82	178	69	247	62	21	83	31	8	39	74	27	101	709	233	942	697.10	232.88	929.98	36.69	34.43	36.08
1882-'83	201	64	265	76	19	95	33	16	49	46	17	63	755	239	994	729.89	235.27	965.16	49.05	31.03	44.13
1883-'84	286	61	347	68	13	81	35	8	43	51	16	67	884	262	1,146	797.21	243.27	1,040.48	42.03	34.21	40.51
1884-'85	229	91	320	65	24	89	37	12	49	84	21	105	926	295	1,221	902.45	270.89	1,173.34	34.76	41.37	36.32
1885-'86	234	69	303	55	22	77	58	15	73	79	23	102	966	301	1,267	936.39	283.23	1,219.62	28.35	34.92	29.96
1886-'87	206	62	268	57	15	72	49	17	66	73	19	92	931	311	1,302	956.07	297.36	1,253.43	31.49	28.48	30.90
1887-'88	247	71	318	59	10	69	52	14	66	95	25	120	1,029	332	1,361	1,009.55	315.55	1,325.08	28.23	20.00	26.64
1888-'89	213	67	280	50	20	70	27	27	54	86	28	114	1,075	322	1,397	1,049.99	323.83	1,373.82	29.94	25.97	28.69



*Summary of total admissions.*

	Male.	Female.	Both sexes.
Percentages of cases recovered .....	39.80	27.25	37.32
Percentages of cases improved .....	14.66	18.98	15.51
Percentages of cases unimproved .....	2.29	4.64	2.76
Percentages of cases died .....	25.41	27.46	25.82
Percentages of cases remaining .....	17.84	21.67	18.59
	100.00	100.00	100.00

The admission for the year ending June 30, 1889, have been 280; the discharges, including 114 deaths, have been 244, leaving 1,397 under treatment at the close of the year. The recoveries are reported as 70, being 28.69 per cent. of the discharges, including deaths. The daily average number in the hospital has been 1,373, which shows a steady increase in its population. The per cent. of deaths to the daily average number resident is 8.30, which is very nearly the average per cent. for the last ten years and is considerably below what the advanced age of so large a proportion of the hospital inmates would lead us to expect. The veterans of the late war continue to be received in undiminished numbers from the Home for Disabled Volunteer Soldiers, although each returning season thins their ranks in the outside world and adds to the burden of years of the survivors. How long the increased number of admissions from the home will continue it is impossible to foretell, but, probably, it will be some years yet before the advancing mortality will more than counterbalance the increase in mental disease, resulting from the infirmities of age conjoined with that inertia of life and loss of ambition and energy which seems to be inseparable from those conditions that compel the old soldier to take refuge in that asylum.

The increase in the number of patients from the District of Columbia has not been as great as in one or two former years. While a temporary diminution in the number of admissions has probably resulted from an embarrassment from want of appropriations in defraying the expenses of the jury trial which the decision of the court in regard to the law of commitment has rendered necessary, probably more is due to a commendable energy on the part of the District authorities in returning to the several homes from whence they had set out the lunatics of varying degree who come from the East and from the West and from the North and from the South, to make Washington their headquarters. Whoever has a grievance, or a new scheme of government, or a call to enlighten Congress, or to help the President in his appointments, or a new gospel to proclaim, all these and as many more go to swell the tide which is constantly setting in towards the District of Columbia, a tide that, unlike all other tides, never of its own accord turns out to sea. But for the vigilant watch and prompt action of the authorities in returning these people with a mission to the neighborhoods whence they sprung, the rural districts would shortly be depleted of their insane, while this hospital was being overcrowded with them.

Of the additional accommodations that have been recently made, and the advantages resulting to the hospital therefrom, a word is proper here. The extensions of the lodges for the colored insane, particularly that for the females, seems to have made an actual change in the character of many of the patients. Crowded into insufficient quarters they



had grown careless, noisy, and destructive in habits, requiring more or less seclusion and restraint, until both attendants and physicians had accepted the situation as the inevitable, and the best that could be done. Now, changed to new quarters, with their light common dining hall, their fresh and trim associate dormitories and rooms, with everything quiet and orderly about them, they have gone to work, have forgotten to be noisy and destructive, the change in their quarters having wrought in them a notable change for the better, an improvement in those chronic, turbulent cases beyond what we had dared to hope.

The convict and criminal class of the insane, including military prisoners, now constitute a considerable item of the population, being 63 in number. It is clear that Howard Hall, the building erected for this class of our inmates, was not opened a day too soon.

This building has accommodation for 60 patients in single rooms, and already we notice here something of the same improvement in conduct and condition so marked in the case of the colored female insane. They are more securely kept, but they have their work room and their smoking room, and therein grow content. The defect is that the building is not large enough for the prospective increase of the classes for whom it is intended to provide. Howard Hall as at present constructed is really but one-half of the plan as originally projected. It is in contemplation in the near future, as the urgent need becomes apparent, to ask appropriations to add a building corresponding very nearly to the present one, which will give to the completed Howard Hall the form of a hollow square, inclosing a perfectly secure ground where the inmates can be at will in the open air and sunshine. Here they can grow plants, keep their pet birds and animals, and make it their home. With the accommodations thus augmented to one hundred and twenty single rooms, it will be possible to make liberal and humane provision for all the convict class entirely distinct from the so-called criminal, and that again distinct from the homicidal and dangerous element against whom no crime is charged, for all of whom Howard Hall will then afford secure asylum.

The wise liberality of the last Congress has provided a pavilion for the sick with all the light and air and varied appliances for their care which are found in the best modern general hospitals, a building whose erection is now being rapidly pushed forward, which when completed and occupied will afford solace and healing to the sick, as well as relief to the others by their removal from the common wards. The great need for an infirmary annex for the feeble and the sick in their early convalescence is only too apparent and the request for the same, together with a full discussion of its merits, will be found under the head of estimates for the coming fiscal year.

It is no longer a question whether more accommodations are to be built—the steady increase in population has settled that—but what form shall such additional accommodations take? What is the annual increase in the number of the insane for whom this provision must be made? In the community at large we may estimate it at one hundred and twenty-five for every million of the inhabitants. The Government hospital is exceptional in this, that, aside from the District of Columbia, whose population for the purposes of this inquiry may be considered a quarter of a million, it receives its accessions from classes of the service that are nearly stationary in numbers, and of which such annual increase can not be predicated. There is, however, a constant increment from the Home for Disabled Volunteer Soldiers and from the District



of Columbia. Taking the record of the last ten years we find the lowest gain in the daily annual average was thirty-four, and the highest one hundred and twenty-eight. Omitting the latter, which was in 1884-'85 and due to the change in the law admitting the inmates of the home, we find the average annual increase for each year to be almost exactly 4 per cent., which means provision for an annual increase of accommodations to the extent of fifty beds. It is important that this additional accommodation each year should take the form which will afford the most perfect classification and hence the greatest relief to the whole.

The following table of farm products shows what has been taken from the farm for the hospital during the fiscal year 1889.

*Table of farm and garden products.*

Apples, 211½ bushels at 50 cents .....	\$105.75
Asparagus, 2,030 bunches, at 6 cents.....	121.80
Beans (string), 508½ bushels, at 75 cents .....	381.37
Beans (Lima), 228 bushels, at \$1.30.....	296.40
Beets, 335 bunches, at 2 cents .....	6.70
Beets, 421 bushels, at 70 cents.....	294.70
Cabbage, 49,498 heads, at 8 cents.....	3,959.84
Cabbage sprouts, 317 barrels, at \$1 .....	317.00
Cantaloupes, 9,748, at 8 cents .....	779.84
Carrots, 719 bunches, at 2 cents.....	14.38
Carrots, 56½ bushels, at 50 cents.....	28.25
Chickens, 235 pounds, at 12 cents.....	28.20
Corn (green ears), 1,564½ dozen, at 15 cents .....	234.62
Cucumbers, 1,597 dozen, at 10 cents .....	159.70
Currents, 462 quarts, at 15 cents.....	69.30
Celery, 16,458 bunches, at 5 cents.....	822.90
Ducks, 111 pounds, at 12 cents.....	13.32
Egg plants, 4,234, at 6 cents.....	254.04
Eggs, 1,589½ dozen, at 20 cents .....	317.90
Figs, 24 quarts, at 25 cents.....	6.00
Grapes, 9,715 pounds, at 5 cents.....	485.75
Geese, 4, at \$1 .....	4.00
Honey, 200 pounds, at 20 cents .....	40.00
Kale, 335 barrels, at \$2.....	670.00
Leeks, 2,885 bunches, at 3 cents .....	86.55
Lettuce, 18,496 heads, at 3 cents.....	554.88
Milk, 63,989 gallons, at 25 cents .....	15 997.25
Onions, 36 bushels, at 65 cents.....	23.40
Onions, 12,987 bunches, at 2 cents.....	259.74
Onion (sets), 25 bushels, at \$4.....	100.00
Oyster plant, 2,100 bunches, at 3 cents .....	63.00
Parsley, 6,240 bunches, at 2 cents.....	124.80
Parsnips, 398 bushels at 75 cents.....	298.50
Peaches, 283½ bushels, at \$2 .....	567.00
Peas, 174½ bushels, at \$1 .....	174.25
Peppers, 25½ bushels, at \$1 .....	25.50
Pork, 8,735 pounds, at 7 cents.....	611.45
Potatoes (Irish), 941 bushels, at 70 cents.....	658.70
Pears, 23½ bushels, at \$1.50.....	35.62
Plums, 1½ bushels, at \$2.....	2.50
Quinces, 29 bushels, at \$2.50 .....	72.50
Rhubarb, 4,442 bunches, at 2 cents .....	88.84
Radishes, 4,973 bunches, at 2 cents .....	99.46
Sweet potatoes, 436 bushels, at 75 cents.....	327.00
Summer squash, 2,943, at 1 cent .....	29.43
Strawberries, 2,007 quarts, at 12 cents .....	240.84
Turnips, 1,3-7 bushels, at 45 cents.....	624.15
Tomatoes, 2,179½ bushels, at 50 cents.....	1,080.75
Sale of stock.....	705.25

Total..... 32,272.12



The following products consumed on the farm can not be considered a part of the profits :

Corn fodder (green), 10 acres, at \$35.....	\$350.00
Corn fodder (dry), 20 tons, at \$15.....	300.00
Corn, 26 barrels, at \$2.50.....	65.00
Grass (green), 20 acres, at \$35.....	700.00
Hay, 300 tons, at \$13.....	3,900.00
Kale, 209 barrels, at \$2.....	418.00
Parsnips, 69 bushels, at 50 cents.....	34.50
Rye (dry), 100 tons, at \$13.....	1,300.00
Rye (green), 15 acres, at \$35.....	525.00
Turnips, 469 bushels, at 45 cents.....	211.05
Total.....	7,803.55

The production of the farm varies somewhat from year to year, being affected by the varying seasons of drought or deluge, yet, taking one crop with another, it is plain that the productiveness is increasing and that it is a most valuable adjunct to the hospital. Its great value is as a dairy farm in affording milk for the inmates. Very much of the forage produced is converted into this as a final product, hence these crops are not included in the table of total value of farm products. It will be seen that the milk value is nearly one-half of the whole. The need for new sites for buildings and their grounds has seriously encroached upon lands formerly planted in crops, so that an urgent necessity exists for more territory for grass lands and grazing, as is fully set forth in the estimates. That the management of the farm is making it more productive rather than impoverishing it will be made clear by some comparisons with the results of ten years ago. The herd of milch cows has been considerably increased—thanks to our new barn—but no new territory has been added, and the small portions hitherto in woodland that have been brought into cultivation are more than offset by the grounds taken from the farm as sites for the detached buildings. In 1879 the milk product, 31,461 gallons, valued at 28 cents a gallon, amounted to \$8,809.08. In 1889 it was 63,989 gallons, or more than double the amount in 1879, which, valued at 25 cents a gallon, amounted to \$15,997.25. The tomato crop in 1879 was 813 $\frac{3}{4}$  bushels; in 1889, 2,179 $\frac{1}{2}$  bushels. The cabbages in 1879 amounted to 16,393 heads; in 1889, to 49,498 heads. On the other hand, there were 498 bushels of peas in 1879 against 174 $\frac{1}{4}$  bushels in 1889, and a pork product of 17,931 pounds in 1879 against only 8,735 pounds in 1889, a decrease from hog cholera. But, taking the total valuation of the products, outside of hay and forage not included, the estimate being at market prices as near as could be ascertained, that of 1879 was \$17,571.89 and that of 1889 was \$32,272.12, showing that farm land is valuable to the hospital and should be increased.

The question of the wages paid to the attendants on the insane having been considered in the committees of the last Congress and having been finally practically left, as it always has been, for the hospital authorities to determine, they, after a careful study of the subject in all its relations and bearings, have adopted a scale of wages which it is thought will be a satisfactory solution of the whole matter, and afford by its graded service intelligent and efficient supervision and care of the insane.

#### ESTIMATES FOR THE FISCAL YEAR ENDING JUNE 30, 1891.

The estimates for expenditures for the fiscal year ending June 30, 1891, are :

For current expenses.....	\$313,500
For general repairs and improvements.....	15,000



For special repairs and improvements, viz :

Lodge at lower entrance.....	\$2, 000
Infirmary wing, with connections.....	36, 000
Completing changes in heating apparatus, including new chimney and boiler-house.....	8, 000
Extension of kitchen and furnishing same.....	5, 000
Rebuilding carpenter and machine shop.....	4, 000
For additional agricultural land.....	10, 000

The estimate for current expenses is for support in the hospital, including treatment and clothing, of an estimated average number of 1,425 indigent insane persons who by law are entitled to treatment here, viz, the insane of the Army and Navy, Marine Corps, Revenue-Cutter Service, National Home for Disabled Volunteer Soldiers, the indigent insane of the District of Columbia, and the United States convict insane. Some classes entitled by law to treatment here, but whose expenses are defrayed from other sources, are not included in this enumeration. The basis of estimate is an annual per capita cost of \$220. Congress has of late provided for a portion of this expenditure in the bill making appropriations for the District of Columbia. The amount in the last bill was \$85,000. Based on the ratio of increase of inmates from the District during the past year the amount to be appropriated in this bill will be \$87,500, leaving the sum of \$226,000 to be provided in the sundry civil bill, of which sum it is asked that not exceeding \$1,500 may be used as hitherto, in defraying the expense of the return of patients to their friends.

For general repairs and improvements \$15,000 is asked. This sum is needed to renew from time to time what is worn out, to introduce whatever new appliances experience has shown to be desirable in the care and treatment of the insane and for the daily repairs that are necessary to keep this vast extent of floors and ceilings and walls in a sound and sanitary condition, thus preserving them from deterioration and decay.

Under the head of special repairs and improvements \$2,000 is asked to place at the lower entrance a cottage to be used as a porter's lodge. This is necessary to the proper custody of the place. The amount asked will build a small but tasteful cottage of brick sufficient for the purpose indicated and in keeping with the surroundings.

The statistics of the hospital for the last ten years show that it is necessary each year to provide additional accommodations for fifty patients. The hospital pavilion for the sick, now rapidly progressing towards completion, will furnish, within the present fiscal year, accommodations for fifty of the sick and paralytic class, which will give a degree of relief to our crowded wards that the same amount of provision could afford in no other way. It is apparent, however, as the work progresses, that an adjoining infirmary wing for the feeble ones and the convalescents risen from their hospital beds, but still too infirm to return to the common wards, a wing, with broad piazzas open to the sunshine and air, is especially needed in connection with the hospital pavilion; and since it is imperative to provide fifty additional beds somewhere it is good economy to make that provision where in the present as well as in the future development of the institution it will do the most good. A connection, by an underground arched way, with the main building is indispensable for convenience in conveying material and inmates to and from the infirmary group as well as for efficient supervision of the whole; \$36,000 is asked to complete, for fifty beds, this remaining wing of the pavilion, together with the necessary connections with the hospital.



For completing the changes in the heating apparatus of the old building, appropriation for one wing of which has been made in the present year, \$8,000 will be needed. This includes changes in boiler-house and a new smoke-stack for the additional boilers required.

The sum of \$5,000 is asked for extension of the kitchen, with the furnishing of the same. When the appropriation for a detached kitchen was made in 1882 the hospital contained 942 inmates, and it was a question if the projected new kitchen was not extravagantly large. Now, with the number of patients already exceeding 1,400, the necessity for extension is apparent. The contemplated change, which it is thought can be made for the estimate, will give ample cooking accommodations for 2,000 persons, a number beyond which it is hoped the hospital will never be called on to provide.

The carpenter and machine shop, built in 1856, upon ground that did not afford a sure foundation, has been in almost daily use ever since, and with the constant jar of the machinery and the gradual settling of the walls, cracks have appeared in the brick-work which are visibly widening, making it unsafe to introduce any additional machinery, and necessitating its being taken down and rebuilt on a firm foundation and an enlarged plan better suited to the present wants of the hospital. Four thousand dollars will be needed for this purpose.

For the purchase of additional agricultural land, \$10,000. This hospital, with 1,400 patients, has barely 200 acres of land available for farming, gardening, and grazing purposes. The remainder is occupied with lawns and groves and sites of buildings devoted to the care of the insane, together with a considerable portion in wooded ravines whose cultivation is out of the question, but which are the charm of the grounds, affording secluded and delightful walks for the inmates. A great majority of the patients belong to the chronic class, for whom the best treatment is work about the grounds at farming or gardening. With sufficient arable land of good quality there is no reason why all vegetables consumed by the inmates, except rice, should not be produced on the hospital farm, and a considerable part of the labor of cultivation be that of the insane. Idle men, sane or insane, are seldom happy; those who have steady occupation are generally content. All alienists are agreed on the importance of keeping the insane occupied, and that farm labor is the best employment for a majority of the male population of an asylum. All authorities also agree that hospital grounds should be of an extent of 1 acre of land for each inmate. The Government Hospital has 1,400 inmates and 400 acres. When it is remembered that the herd numbers more than 100 milch cows and a proportional number of young cattle, the pressing need of more territory for pasturage and grass lands is apparent. It is not essential that land for this purpose should be adjacent to the hospital buildings. Outlying fields that may still be purchased at the price of agricultural land will do very well, but it is important that these be secured at once before the advance in all real estate in the vicinity of Washington leaves nothing but house lots available for pasturage. Ten thousand dollars ought still to secure a good extent of agricultural land within easy access to the hospital.

The vacancy in the night medical service resulting from the resignation of Dr. Kenney has been acceptably filled by the appointment of Dr. Charles H. Latimer, of Maryland, a young man who brings the record of some years of successful practice and the highest testimonials of character to this responsible work. The advantage of a night medical service in a large institution like ours is very apparent, and we are surprised that such service is not more generally adopted. Dr. Black-



burn continues to devote his time to pathological research, a work that is coming more and more to be recognized as a necessity in our American hospitals, and is beginning to receive something of the attention which it deserves from the officers in charge. Dr. Blackburn's summary of his studies appears in a supplement to this report. Also the report of Dr. Calver, dentist, containing a résumé of the important work done in his department, in caring for the teeth of the insane. The enlarged experience of the past year in this direction confirms the Board in their belief in the wisdom of this expenditure. Dr. Samuel R. Means, of Washington, has been doing useful work in careful clinical observations among the male patients, a field in which there is still much to be learned. The other members of the staff, for many years unchanged, have by faithful and intelligent labor, in fields grown familiar to them, done much to contribute to the successful results of the year.

To friends who have aided us in our concerts and dramatic entertainments, also with gifts of flowers, magazines, and books for the inmates, as well as pictures for our wards, our thanks are tendered. Such gifts are always acceptable, and books and magazines thus received find many to peruse their pages in our wards. Many persons after reading their magazine or summer story throw it aside and never think of it again. It would be better to notify the superintendent and let the hospital wagon call for them.

The work of the hospital grows with each year, bringing no common responsibility to those who bear it. It is not a light service, this caring for a township of the insane. But it is for us to make it worthy as a nation's charity, and for Congress by a wise liberality in providing for the every need of these afflicted ones to make our burdens light.

We are, very respectfully, your obedient servants,

J. M. TONER,  
*President.*

W. W. GODDING,  
*Superintendent.*

Hon. JOHN W. NOBLE,  
*Secretary of the Interior.*

GOVERNMENT HOSPITAL FOR THE INSANE,  
*Washington, D. C., August 16, 1889.*

SIR: In accordance with the act of Congress, approved June 4, 1880, requiring the Superintendent of the Government Hospital for the Insane to make a report to Congress annually of the detailed expenditures of the hospital for the preceding fiscal year, I have the honor to submit the following statement.

I am, sir, very respectfully, your obedient servant,

W. W. GODDING,  
*Superintendent.*

Hon. JOHN W. NOBLE,  
*Secretary of the Interior.*

*Supplementary to June 30, 1888.*

On hand, deficiency .....	\$2, 251. 61
<b>EXPENDITURES.</b>	
Live stock .....	\$650. 00
Furniture fixtures, etc .....	766. 89
Utensils, crockery, etc .....	499. 00
Implements .....	325. 00
Total .....	2, 240. 89
Disallowed .....	. 78
Covered into United States Treasury on deficiency .....	9. 94
	<u>2, 251. 61</u>

*Detailed statement of receipts and expenditures for the fiscal year ending June 30, 1889.*

<b>RECEIPTS.</b>	
Appropriation for support .....	\$201, 315. 00
Appropriation for District of Columbia .....	79, 185. 00
Appropriation for buildings and grounds .....	42, 700. 00
Appropriation for deficiency .....	11, 000. 00
On hand, buildings and grounds .....	23, 611. 98
Miscellaneous receipts .....	22, 366. 90
Total .....	<u>380. 178. 88</u>

<b>EXPENDITURES.</b>	
<b>Subsistence :</b>	
Flour, meal, and crackers .....	15, 251. 55
Ice .....	3, 888. 92
Butter, cheese, and eggs .....	17, 596. 29
Fresh meat .....	23, 300. 06
Salt and smoked meats .....	12, 518. 22
Fish and poultry .....	6, 489. 84
Tea and coffee .....	8, 330. 69
Sugar and molasses .....	8, 525. 63
Lard .....	959. 22
Fruits and vegetables .....	6, 926. 62
Other groceries .....	9, 147. 53
	<u>112, 934. 57</u>
<b>House furnishing, fuel, lights, etc. :</b>	
Furniture, fixtures, etc .....	3, 526. 37
Bedding .....	8, 220. 05
Table and towel linen .....	857. 02
Utensils, crockery, etc .....	2, 215. 93
Kitchen fittings .....	194. 28
Laundry supplies .....	3, 142. 91
Carpets .....	463. 52
Hard coal .....	2, 051. 45
Soft coal .....	9, 953. 71
Lights, oils, etc .....	1, 589. 78
Making brooms .....	179. 11
Wood .....	421. 29
	<u>32, 815. 42</u>
<b>Dry goods and clothing, books, stationery, and miscellaneous :</b>	
Boots, shoes, and slippers .....	3, 009. 32
New clothing .....	1, 348. 86
Clothing material .....	7, 221. 18
Hats .....	342. 75
Notions .....	991. 18
Books and periodicals .....	610. 00
Stationery and postage .....	708. 38
Freight and hauling .....	314. 30
Incidental work, etc .....	143. 86
Advertising .....	48. 85
Electrical instruments .....	148. 95
Photographic instruments, etc .....	38. 57
	<u>14, 926. 20</u>



Medical supplies, expended for amusement of patients, etc.:		
Drugs, medicines, etc.	\$1,961.87	
Alcoholic stimulants	1,121.53	
Instruments, etc.	134.14	
Returning eloped patients	177.20	
Amusement of patients	1,450.64	
Sending to their homes	246.06	
Refunded board money	2.00	
Pathological supplies	208.25	
Dental supplies	53.92	
		\$5,355.61
Farm, garden, and stable:		
Feed	8,892.32	
Implements, horseshoes, etc	884.34	
Plants and seeds	574.18	
Manures	591.39	
Live stock	565.00	
Harness and repairs	683.19	
Vehicles and repairs	2,092.35	
Hay and straw	2,249.66	
Incidental expenses	67.49	
		16,599.92
Repairs and improvements:		
Lumber, doors, etc	4,762.67	
Hardware, etc	2,070.15	
Engineers and plumbers' supplies	6,234.03	
Paints, oils, glass, etc	1,831.93	
Roofing	914.02	
Iron work, etc	2,633.46	
Plastering	273.15	
Sundry small repairs, etc	1,060.20	
Fire and other apparatus	746.50	
Mason's supplies	3,782.70	
Buildings	8,275.93	
		32,584.74
Salaries and wages:		
Superintendents, physicians, and general office	16,902.26	
Ward service	45,070.76	
Inside domestic department	14,990.54	
Engineer's department	9,155.45	
Farm and garden, hauling coal, drivers, etc	24,306.61	
Mechanics and helpers	19,262.47	
Making clothing	2,102.23	
Laundry	5,224.71	
Sunday service	500.00	
		137,515.03
Covered into United States Treasury on buildings and grounds		2.32
On hand, buildings and grounds		27,417.15
On hand, deficiency		27.92
Total		380,178.88

*Classified expenditures Government Hospital for the Insane, for fiscal year ending June 30, 1888 (supplementary).*

Date.	Furnished by—	On voucher num- bered—	Live stock.	Furniture, fi x - tures, etc.	Utensils, crockery, etc.	Implements.	Grand total.
1888.							
June 30	William Fairweather	881	\$650.00				
30	J. G. Bates	882		\$32.50			
30	Bramhall, Deane & Co	883			\$92.00		
30	Braman, Dow & Co	884			407.00		
30	Rowley & Hermance	885				\$325.00	
30	Wash. B. Williams	886		386.00			
30	Julius Lansburgh	887		348.39			
	Total		650.00	766.89	499.00	325.00	\$2,240.89





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Classified expenditures, Government Hospital for the Insane, for fiscal year ending June 30, 1889—Continued.

SUBSISTENCE—Continued.

Date.	Furnished by—	On voucher num- bered—	Flour, meal, crack- ers, etc.	Ice.	Butter, cheese, and eggs.	Fresh meat.	Salt and smoked meats.	Fish and poultry.	Tea and coffee.	Sugar and molas- ses.	Lard.	Fruits and vege- tables.	Other groceries.	Grand total.
1888.														
Dec. 31	Poole & Brooke.....	349			\$70.80				\$81.27				\$104.59	
31	Thurber, Whyland & Co.....	352					\$439.81		573.04	\$340.71			146.46	
31	G. G. Cornwell & Son.....	356	\$405.38										600.07	
31	Schafer & Clary.....	364										\$30.00		
31	Andrews & Wade.....	365										519.78		
31	Great Falls Ice Company.....	366		\$621.89										
31	Willis Worster.....	368						\$134.51	486.05	724.96		79.00		
31	Frank Hume.....	370			189.23								316.26	
1889.														
Jan. 9	Maria Wormley.....	381			3.52									
31	W. R. Smallwood.....	410						2.70						
31	James F. Oyster.....	415			1,166.70									
31	Frank Hume.....	426			138.15			142.60	713.37	555.87			483.58	
31	Browning & Middleton.....	461	75.07							34.50			80.70	
31	H. L. Strang.....	462										374.48		
31	W. M. Galt & Co.....	468	243.50											
31	Bert R. Scannell.....	483				\$4,135.43	600.78							
Feb. 28	McAfee Bros.....	519												
28	James L. Barbour & Son.....	520	25.20		1,168.00					69.31		483.14	148.68	
28	Gambrill Manufacturing Com- pany.....	521	3,041.50											
28	James F. Oyster.....	525			1,015.47									
28	Thomas O. Varnell.....	526				64.30	1,665.98				\$215.43			
28	Frank Hume.....	530			199.67			131.27	277.91	1,037.64			184.19	
28	Rabbitt & Crown.....	531						752.51				30.35		
28	Bert R. Scannell.....	532												
28	E. J. Adams & Co.....	535				2,297.48	447.02					105.00		
28	Andrews & Wade.....	538										495.20		
Mar. 15	S. K. Winans.....	556						3.00						
15	A. J. Fouch & Co.....	557						7.50						
15	Fred. Oefinger.....	558						1.50						
15	H. D. Kendall.....	559						5.00						
18	J. A. Chelton.....	566						6.00						
18	G. W. Randolph.....	567						6.00						
22	M. B. Cloud.....	574						6.50						

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SUBSISTENCE—Continued.

Date.	Furnished by—	On voucher num- bered—	Flour, meal, crack- ers, etc.	Ice.	Butter, cheese, and eggs.	Fresh meat.	Salt and smoked meats.	Fish and poultry.	Tea and coffee.	Sugar and molas- ses.	Lard.	Fruits and vege- tables.	Other groceries.	Grand total.
1889.														
June 29	Bert. R. Scannell.	826				\$1,545.16	\$324.94							
29	Kingsley Bros.	835			\$283.20									
29	Rider & Addison.	844											\$6.51	
29	Brown Bros.	850										\$39.75		
29	Robert D. Weaver & Brothers.	856				23.60					\$52.54			
29	Thomas O. Varnell	857					955.77							
29	James F. Oyster.	860			764.25			\$115.58				145.32		
29	Rabbitt & Crown	867												
	Total		\$15,251.55	\$3,888.92	17,596.29	23,300.06	12,518.22	6,489.84	\$8,330.69	\$8,525.63	959.22	6,926.62	9,147.53	\$112,934.57

Classified expenditures—Continued.

HOUSE FURNISHING, FUEL, LIGHTS, ETC.

Date.	Furnished by—	On voucher numbered—	Furniture, fixtures, etc.	Bedding.	Table and towel linen.	Utensils, crockery, etc.	Kitchen fittings.	Laundry supplies.	Carpets.	Hard coal.	Soft coal.	Wood.	Lights, oils, etc.	Making brooms.	Grand total.
1888.															
July 31	William Beaman	23							\$40.40					\$20.70	
31	J. H. Peake	25													
28	Jerry Hodge	169		\$8.80											
31	Wash B. Williams	170	\$276.30												
31	Julius Lansburgh	171	75.00												
Aug. 31	James L. Barbour & Son	76						\$11.75					\$11.20		
31	Woodward & Lothrop	86		85.00											
28	C. A. Wissing	181		300.00											
31	D. Knowlton	182		175.00											
Sept. 29	J. M. Wheatley	96									\$9,911.71				
29	Rider & Addison	98		1,566.92								\$71.80			
29	T. B. Middleton	135													
29	Charles H. Nicolai	136													
29	American Multiple Fabric Co.	137						47.51							
29	Julian Rosenblatt	139						402.81							
29	Thomas G. Hood	147		1,560.69	\$57.97										
29	R. A. Robbins	148		365.84	45.89			18.50							
29	J. C. Ergood & Co.	156				\$19.80		33.80							
29	M. W. Beveridge	160				339.96									
29	William Sellers & Co.	8						18.29							
29	C. A. Wissing	29	33.00												
29	Edward Hurlburt	176						60.00							
Oct. 8	William Beaman	184													
22	Arthur B. Smith	199								\$2,051.45				16.80	
29	John Early & Co.	206				357.69									
31	Walter B. Williams	210	90.70												
31	H. Hoffa	212	7.00												
31	A. P. McElroy & Co.	221	33.04				\$23.00								
31	W. H. Harrover	222													
Nov. 20	William Beaman	253													
30	George J. Johnson	272		487.05	188.25									18.00	
30	B. T. Babbitt	274						160.00							

## Classified expenditures—Continued.

## HOUSE FURNISHING, FUEL, LIGHTS, ETC.—Continued.

Date.	Furnished by—	On voucher numbered—	Furniture, fixtures, etc.	Bedding.	Table and towel linen.	Utensils, crockery, etc.	Kitchen fittings.	Laundry supplies.	Carpets.	Hard coal.	Soft coal.	Wood.	Lights, oils, etc.	Making brooms.	Grand total.
1888.															
Nov. 30	Lansburgh & Bro.	279	\$661.91	\$461.54	\$144.70										
30	W. B. Moses & Son	280													
30	Rider & Addison	281		10.44											
30	Julius Lansburgh	283	157.41	4.50	4.32				\$157.96						
30	Wilmarth & Edmonston	284				\$153.23									
30	Woodward & Lothrop	285		124.20	45.50										
30	Myers & Loving	286		59.17											
Dec. 4	C. A. Wissing	303	14.00												
14	Crawford & Poland	310	39.00												
17	T. B. Middleton	312										\$171.49			
22	William Noell	327	56.50												
31	James L. Barbour & Son	344						\$40.00					\$12.60		
31	F. H. Younges	350	235.00												
31	R. A. Robbins	353			57.45	19.47									
31	Thomas G. Hood	354		442.41	207.01				53.40						
31	Meixsel & Co	359												\$75.91	
31	Charles H. Nicolai	360											422.17		
31	E. N. Gray & Co	367						3.20							
31	E. E. White	369						32.50							
1889.															
Jan. 16	James Gunnell	390									\$12.00				
19	William Beaman	394												9.30	
23	Washington Gas-Light Co.	400	4.00												
25	The Knitted Mattress Co.	403		837.07											
30	The Washington Welshbach Incandescent Gas-Light Co.	408	35.00												
31	J. M. Wheatley	416									20.00				
31	S. A. Woods Machine Co.	432				5.76									
31	Crawford & Poland	435						40.20				87.80			
31	T. B. Middleton	438													
31	The Fowler Manufacturing Co.	439		7.00											
31	Robert Boyd	441					\$14.25								



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Classified expenditures—Continued.  
HOUSE FURNISHING, FUEL, LIGHTS, ETC.—Continued.

Date.	Furnished by—	On voucher numbered—	Furniture, fixtures, etc.	Bedding.	Table and towel linen.	Utensils, crockery, etc.	Kitchen fittings.	Laundry supplies.	Carpets.	Hard coal.	Soft coal.	Wood.	Lights, oils, etc.	Making brooms.	Grand total.
1889.															
May 31	S. S. Shedd & Bro.	764	\$30. 25								\$10. 00				
May 31	J. M. Wheatley	773													
June 29	Charles H. Nicolai	797											\$294. 25		
June 29	John Early & Co.	799				\$204. 23									
June 29	Union Oil Company	800						\$59. 16							
June 29	B. T. Babbitt	801						195. 28							
June 29	W. B. Moses & Son	812	9. 70						\$96. 80						
June 29	M. W. Beveridge	813				95. 41									
June 29	James L. Barbour & Son	820											14. 70		
June 29	J. C. Ergood & Co.	822					\$6. 00	13. 00							
June 29	W. H. Harrover	832													
June 29	M. G. Copeland & Co.	841	4. 55												
June 29	Wilmarth & Edmonston	846				51. 62									
June 29	Washington Gas Light Co.	853						6. 00							
June 29	Lansburgh & Bro.	859			\$7. 78										
June 29	W. B. Moses & Son	236	22. 25												
June 29	Julius Lansburgh	869	36. 37			18. 04			79. 96						
June 29	E. G. Wheeler	870													
	Total		3, 526. 37	\$8, 220. 05	857. 02	2, 215. 93	194. 28	3, 142. 91	463. 52	\$2, 051. 45	9, 953. 71	\$421. 29	1, 589. 78	\$179. 11	\$32, 815. 42

DBY GOODS AND CLOTHING, BOOKS, STATIONERY, AND MISCELLANEOUS.

Date.	Furnished by—	On voucher numbered—	Boots, shoes, and slippers.	New clothing.	Clothing material.	Hats.	Notions.	Books and periodicals.	Stationery and postage.	Freight and hauling.	Incidental work, etc.	Advertising.	Electrical instruments.	Photographic instruments, etc.	Grand total.
1888.															
July 17	Lea Bros. & Co.	3			\$6.53			\$5.00							
23	Samuel Beiber	7						2.75							
25	A. F. Brooke	9							\$1.50						
26	J. Baumgarten & Son	13								\$4.18					
31	George W. Knox	26								1.20					
31	Baltimore & Ohio Express Company	27								.65					
31	Adams Express Company	28											\$100.00		
31	Chesapeake & Potomac Telephone Co	35										\$6.00			
27	Washington Post	155										7.00			
27	Daily National Republican	156										9.15			
27	The Evening Star	157										6.30			
27	Lee Crandall	158										5.41			
27	The Sunday Herald	159										6.50			
27	T. G. Morrow	160										3.37			
27	Washington Post	164										1.12			
27	The Capital	165										4.00			
27	Washington Critic	166													
Aug. 4	Lamb Knitting Machine Manufactur- ing Company	44									\$2.44				
6	R. C. Jones	47						6.00							
31	Adams Express Company	77								3.40					
31	Woodward & Lothrop	86			181.74										
31	George W. Knox	95								16.56					
Sept. 12	J. Baumgarten & Son	103							1.50						
29	Washington City Post-Office	127							44.00						
29	Department of the Interior	128							42.07						
29	Department of the Interior	129							.24						
29	Baltimore & Potomac Railroad Co.	131								.30					
29	Adams Express Company	132								2.10					
29	George W. Knox	133								16.97					
29	G. Alder Blumer	139						5.00							



*Classified expenditures—Continued.*

DRY GOODS AND CLOTHING, BOOKS, STATIONERY AND MISCELLANEOUS—Continued.

Date.	Furnished by—	On voucher numbered—	Boots, shoes, and slippers.	New clothing.	Clothing material.	Hats.	Notions.	Books and periodicals.	Stationery and postage.	Freight and hauling.	Incidental work, etc.	Advertising.	Electrical instruments.	Photographic instruments, etc.	Grand total.
1888.															
Sept. 29	Thomas G. Hood	147			\$1,967.06										
29	R. A. Robbins	148			647.52		\$10.41								
29	T. G. Morrow	150						\$18.33							
29	Jeanette Blum	162	*				195.48								
29	The Washington Post	163						23.31							
29	A. L. Williston	175							\$120.00						
Oct. 5	William B. Pearce	180						2.00							
8	R. C. Jones	185						6.00							
9	P. A. Connell	186					1.25								
19	S. Oppenheimer & Bro.	193					5.00								
31	United States Express Company	209								\$0.50					
31	Adams Express Company	215								.50					
31	George W. Knox	216								59.75					
31	E. Morrison	224							27.37						
31	James J. Chapman	226						42.20							
31	Anerbach & Bro.	227		\$141.25											
31	J. U. Burkett & Co.	229													
Nov. 30	George J. Johnson	272		268.86									\$14.40		
30	James R. Michael	276			363.01										
30	Lansburgh & Bro.	279			668.85		156.54								
30	William Hahn & Co.	282													
30	Woodward & Lothrop	285	\$77.87		73.00										
30	Baltimore & Potomac Railroad Co.	288								.38					
30	George W. Knox	289								38.78					
30	United States Express Company	290								.25					
30	Adams Express Company	291								2.40					
Dec. 4	L. D. Williams	300						18.00							
7	R. C. Jones	306						7.00							
22	J. L. Shaw	326						6.00							
26	Augustus Thomas	328													
27	W. H. Moore	330			1,108.23			158.05							

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## Classified expenditures—Continued.

**MEDICAL SUPPLIES, EXPENDED FOR AMUSEMENT OF PATIENTS, ETC.**

Date.	Furnished by—	On voucher numbered—	Drugs, medicines, etc.	Alcoholic stimulants.	Instruments, etc.	Returning eloped patients.	Amusement of patients.	Sending to their homes.	Refunded board money.	Pathological supplies.	Dental supplies.	Grand total.
1888.												
July 14	J. D. Butler	1				\$5.00						
16	Thomas Swan	2				5.00						
20	Elmer Howard	4				5.00						
21	Nora Barrett	6					\$4.40					
31	G. G. Cornwell & Son	30		\$46.08								
9	Charles Hopkins	40						\$21.00				
15	John R. Willis	41						15.00				
17	Timothy O'Malley	42						12.11				
Aug. 5	G. F. Fredrick	46				5.00						
10	C. Kades	48				5.00						
27	H. Wagner	67					10.50					
31	Jacob Beacham	74				5.00						
31	Jas. L. Barbour & Son	76	\$225.50	308.51								
31	G. G. Cornwell & Son	85		75.37								
31	Frank Hume	88		24.75			5.40					
Sept. 28	L. P. Weedon	113										
28	J. C. Smith	114				5.00						
29	Robert L. Davis	118					2.30					
29	George W. Henson	119				5.00						
29	Jas. W. Queen & Co.	140								\$22.75		
29	Thurber, Whyland & Co.	143		153.33								
29	E. F. Houghton & Co.	144	36.00									
29	Price Manufacturing Company	145	91.31									
29	E. E. White	157		24.00								
29	Browning & Middleton	161		7.00								
29	Daniel Loughran	165					412.55					
29	Melville Lindsay	166	57.00							21.50		
29	S. F. Ware	167	159.53									
29	Z. D. Gilman	168	154.49									
29	A. C. Patterson	169					41.61					
29	F. G. Perry	177								44.00		
Oct. 10	J. McMahon	187				5.00						

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Classified expenditures—Continued.  
MEDICAL SUPPLIES, EXPENDED FOR AMUSEMENT OF PATIENTS, ETC.—Continued.

Date.	Furnished by—	On voucher numbered—	Drugs, medicines, etc.	Alcoholic stimulants.	Instruments, etc.	Returning eloped patients.	Amusement of patients.	Sending to their homes.	Refunded board money.	Pathological supplies.	Dental supplies.	Grand total.
1889. Mar. 2	G. H. Pray	546					\$15. 00					
7	Harry B. Sweeney	550				\$5. 00						
20	John W. Hayes	571				5. 00						
25	Henry Eberbach	578					12. 85					
28	Henry Matthews	586				5. 00						
29	S. C. Elliott	591					4. 00					
30	A. C. Patterson, chief clerk	594					36. 05					
30	G. G. Cornwell & Son.	599		\$94. 46								
30	T. H. McAllister	605					64. 95					
30	James W. Queen & Co	609					. 90					
30	Price Manufacturing Company	610	\$77. 24									
30	Parke, Davis & Co	613	22. 45									
30	N. W. Burchell	624	1. 00									
30	M. Silverberg & Co	625					11. 07					
30	S. F. Ware	630	113. 76									
30	George J. Mueller	639					118. 49					
30	Edward F. Droop	649					5. 65					
30	Melville Lindsay	659			\$0. 96							
Apr. 4	John F. Cox	676				5. 00						
24	L. G. Spencer	685					12. 50					
19	J. C. Simpson	718						\$41. 25				
May 8	Oscar King	725				5. 00						
9	James Ayres	727				5. 00						
9	W. D. Barry	728					22. 25					
24	James Johnson	739				5. 00					\$5. 50	
31	Gideon Sibley	753										
31	William M. Galt & Co	759	22. 32									
31	G. G. Cornwell & Son	765		46. 08								
14	George A. Price	771						13. 20				
27	A. H. Witmer	772						13. 75				
7	F. D. Cross	777				5. 00						
15	Samuel West	779				5. 00						

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Classified expenditures—Continued.

FARM, GARDEN, AND STABLE.

Date.	Furnished by—	On voucher numbered—	Feed.	Implements, etc.	Plants and seeds.	Manures.	Live stock.	Harness and repairs.	Vehicles and repairs.	Hay and straw.	Incidental expenses.	Grand total.
1888.												
July 31	J. H. Mitchell.	24		\$5.50								
Aug. 27	J. L. Green.	68									\$32.50	
27	Myers & Loving.	69	\$160 74									
27	R. H. Owens	70							\$85.25			
31	James L. Barbour & Son.	76	582.11							\$315.57		
31	Thomas Gray & Son.	78		6.00	\$15.75							
31	R. H. Owens	79		7.50					223.00			
31	W. M. Galt & Co	84	320.50		10.00							
Sept. 29	R. H. Owens	134		31.00					36.60			
29	The Scott Fertilizer Company.	141				\$124.00						
29	Thomas Gray & Son.	152			68.00							
29	Poole & Brooke.	154						\$1.80				
29	Allison Nailor, jr	158				50.00						
29	W. W. Godding	170										
Oct. 30	Myers & Loving.	207	479.46							38.57	32.49	
31	C. A. J. Williamson	208									2.50	
31	Adams Express Company	213				37.50						
31	R. H. Owens	214		7.50				127.15				
31	James L. Barbour & Son.	217	1,165.50							50.83		
31	John McDermott & Bro	218							621.80			
31	J. H. Mitchell.	219		19.25								
31	Orndorff & Truxton	225			13.70							
31	Lutz & Bro.	228						220.50				
31	William M. Galt & Co	232	389.50				\$10.00					
Nov. 28	Louis Schmidt & Sons	264										
30	Thomas Gray & Son.	273		3.00		12.75						
30	Myers & Loving.	286	110.69									
30	Schlegel & Quigley	287					400.00					
31	James L. Barbour & Son.	344	340.20							399.68		
31	I. J. Baker	347										
31	R. H. Owens	361		12.80					23.80			
31	Myers & Loving.	362	144.66	16.00								

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Classified expenditures—Continued.  
FARM, GARDEN, AND STABLE—Continued.

Date.	Furnished by—	On voucher numbered—	Feed.	Implements, horseshoes, etc.	Plants and seeds.	Manures.	Live stock.	Harness and repairs.	Vehicles and repairs.	Hay and straw.	Incidental expenses.	Grand total.
1889.												
June 29	W. L. King & Bro	848						\$0. 50				
29	John Saul	852			\$12 00							
29	Allison Nailor, jr.	854				\$50. 00						
29	Adams Express Co	858				37. 50						
29	Thomas W. McKrew	868						6. 27		\$68. 48		
29	E. G. Wheeler	870		\$8. 20					\$107. 70			
29	R. H. Owens	871		4. 25								
	Total		\$8, 892. 32	884. 34	574. 18	591. 39	\$565. 00	683. 19	2, 092. 35	2, 249 66	\$67. 49	\$16, 599. 92

## REPAIRS AND IMPROVEMENTS.

Date.	Furnished by—	On voucher numbered—	Lumber, doors, etc.	Hardware, etc.	Engineers and plumb- ers' supplies.	Paints, oils, glass, etc.	Roofing.	Iron work, etc.	Plastering.	Sundry small repairs, etc.	Fire and other appa- ratus.	Masons' supplies.	Buildings.	Grand total.
1888.														
July 23	William H. Richards & Co	154										\$78.50	\$3,406.00	
31	J. H. Grant.	161												
31	John T. Webster	162										562.50		
31	L. H. Schneider & Son	167		\$197.65										
31	Thomas Gray & Son	78				\$649.36			\$8.50					
Aug. 31	Daniel Shanahan	81												
31	George A. Sheehan	1	\$169.78											
31	Thomas W. Smith	2	20.23										1,200.00	
25	James H. Grant.	172												
31	Thomas Gray & Son	173										80.75		
31	Samuel Emery	174										118.55		
31	George A. Sheehan	175	228.00											
31	Thomas Gray & Son	177										75.40		
31	Willet & Libbey	178	65.96											
31	Daniel Shanahan	179				107.52								
31	Wheatley Bros	180	304.15											
Sept. 29	The Gutta Percha and Rubber Manufac- turing Company	142									\$56.00			
29	Price Manufacturing Company	145			\$137.27	34.35								
29	Robert Leitch & Sons	149								\$11.50				
29	Thomas Gray & Son	152												
29	Charles Becker	153				53.88				46.82				
28	A. O. Brummel	4								15.30				
29	Rider & Addison	5												
29	W. W. Tupper & Co	6									316.25			
29	Otis Bros. & Co	7												
29	Robert Leitch & Sons	9			341.27								1,500.00	
29	J. H. Grant.	183												
29	George H. Baldwin	184										4.00		
29	Thomas Gray & Son	185										45.90		
29	William H. Richards & Co	186										50.00		
29	James Quarles	187										.75		



Classified expenditures—Continued.

REPAIRS AND IMPROVEMENTS—Continued.

Date.	Furnished by—	On voucher numbered—	Lumber, doors, etc.	Hardware, etc.	Engineers and plumb- ers' supplies.	Paints, oils, glass, etc.	Roofing.	Iron work, etc.	Plastering.	Sundry small repairs, etc.	Fire and other appa- ratus.	Masons' supplies.	Buildings.	Grand total.
1888.														
Sept. 29	Harrison Pleasant	188										\$1.50		
29	The Clark Manufacturing Company	190								\$221.35				
29	Morris Tasker & Co	191			\$88.35									
29	Edward L. Dent	192						\$967.64						
29	Mobley & Scheuerman	193												
29	Robert Leitch & Sons	195			45.36						\$118.25	6.17		
29	John Miller	197										242.50		
29	Robert Leitch & Sons	198			662.29									
29	John Early & Co	206				\$31.32								
Oct. 31	George Ryneal, jr	223				67.80								
31	Robert Leitch & Sons	223			710.00									
31	O. L. Wolfenstein & Co	199		\$501.18										
31	T. B. Cross, jr	200	\$165.07											
31	W. M. Whyte & Bro	201		15.00									\$1,500.00	
31	J. H. Grant	202												
31	C. Fen Keys	203								75.00				
31	Robert Leitch & Sons	204			38.88									
31	J. F. Manning	206			168.00									
17	George Mathieson	11										1.00		
31	William H. Richards & Co	12										53.50		
31	Willet & Libbey	13	356.55											
31	C. Fen Keys	14								224.17				
31	Robert Leitch & Sons	15			161.38									
20	Daniel Shanahan	254				255.42								
20	Edward L. Dent	17						58.05						
20	Daniel Shanahan	18				74.45								
28	William S. Cross	19	607.52											
30	Chas. Wyite & Co	20						233.90						
30	A. O. Brummell	21												
30	Chas. J. Fanning	207					\$540.50			19.33				
30	Chas. White & Co	208						408.55						
30	Thos. Gray & Son	209							\$90.90					

[illegible]





[illegible]



## Classified expenditures—Continued.

## SALARIES AND WAGES.

Date.	Furnished by—	On voucher numbered—	Superintendent, physicians, and general office.	Ward service.	Inside domestic department.	Engineer's department.	Farm and garden, hauling coal, drivers, etc.	Mechanics and helpers.	Making clothing.	Laundry.	Sunday service.	Grand total.
1888.												
July 20	Ellen Bowling.....	5							\$13.50			
25	Pasquale Serpico.....	8							20.40			
25	H. M. McAndrews.....	10							11.52			
25	M. Wilkinson.....	11							18.00			
30	Jane Beavan.....	21							18.00			
31	O. A. Moore.....	22							13.50			
31	Pay-roll—support.....	36	\$1,341.47	\$2,640.20								
31	do.....	37		\$767.00			\$1,016.00					
31	do.....	38		460.84			1,048.43			\$450.80		
31	do.....	39				\$585.83		\$601.00				
31	Pay-roll—buildings and grounds.....	163						918.61				
31	do.....	168						689.31				
Aug. 3	L. M. Cross.....	43							12.00			
13	Bessie Stuart.....	51							18.00			
14	Etta Harrison.....	54							20.00			
17	O. A. Moore.....	58							9.00			
24	Lizzie Langley.....	59							13.50			
28	M. Wilkerson.....	71							13.50			
31	Jane Beavan.....	73							13.50			
31	L. M. Cross.....	75							15.71			
31	Pay-roll—support.....	91	1,405.92	2,542.75								
31	do.....	92		758.60								
31	do.....	93		472.40								
31	do.....	94				785.83	1,016.00	390.43		431.82		
31	Pay-roll—buildings and grounds.....	3					1,324.89	971.32				
31	do.....	176						1,365.37				
Sept. 3	Ellen Bowling.....	99							13.50			
4	K. R. Barclay.....	100							13.50			
5	H. M. McAndrews.....	101							15.36			
12	S. A. Wood.....	102							9.00			
15	Jane Jardine.....	105							9.00			
22	Maggie O'Leary.....	106							13.50			

[illegible]



Classified expenditures—Continued.  
SALARIES AND WAGES—Continued.

Date.	Furnished by—	On voucher numbered—	Superintendent, physi- cians, and general of- fice.	Ward service.	Inside domestic depart- ment.	Engineer's department.	Farm and garden, haul- ing coal, drivers, etc.	Mechanics and helpers.	Making clothing.	Laundry.	Sunday service.	Grand total.
1888.												
Nov. 27	Fannie E. Bonini.....	260							\$8.50			
28	Ellen Bowling.....	261							13.50			
28	K. R. Barclay.....	263							12.75			
30	Jane Beavan.....	265							15.75			
30	M. McInturf.....	266							8.16			
30	M. A. Dodge.....	268							8.50			
30	S. A. Wood.....	269							37.33			
30	Pay-roll—support.....	292	\$1,471.15	\$2,506.49								
30	do.....	293		1,172.86	\$759.50							
30	do.....	294			499.97		\$1,022.00	\$827.50		\$419.00		
30	do.....	295				\$638.33	828.43	879.09				
30	Pay-roll—buildings and grounds.....	22						471.98				
30	do.....	211										
30	Nellie G. Quaid.....	299							8.16			
Dec. 3	Lizzie Langley.....	301							14.75			
4	F. M. Blaine.....	302							8.16			
4	L. M. Cross.....	304							17.00			
4	M. V. Powell.....	305							17.00			
5	Mrs. O. A. Moore.....	307							13.50			
7	Bessie Stuart.....	308							8.50			
8	Emma Green.....	311							8.16			
15	Eliza Goodwin.....	314							8.50			
19	Jane Beavan.....	315							10.50			
20	A. Wathen.....	316							18.00			
20	Fannie S. Tippet.....	317							9.00			
21	M. A. Dodge.....	318							8.50			
21	E. H. Stanton.....	319							8.67			
21	Belle Dodge.....	320							22.10			
21	S. M. Hardy.....	321							8.16			
21	H. M. McAndrews.....	322							11.52			
21	Etta Harrison.....	324							17.70			
21	Mary Perkins.....	325							8.50			
22	Catharine Fry.....	338							8.50			

[illegible]



Classified expenditures—Continued.

SALARIES AND WAGES—Continued.

Date.	Furnished by—	On voucher numbered—	Superintendent, physi- cians, and general of- fice.	Ward service.	Inside domestic depart- ment.	Engineer's department.	Farm and garden, haul- ing coal, drivers, etc.	Mechanics and helpers.	Making clothing.	Laundry.	Sunday service.	Grand total.
1889.												
Feb. 28	Pay-roll—support.	544			\$487.36	\$733.33	\$1,307.08	\$852.23		\$431.18		
28	do	545					220.30	229.00				
28	Pay-roll—buildings and grounds	45										
Mar. 2	A. Wathen	547							\$8.50			
2	Ada Luckett	548							8.50			
6	S. A. Wood	549							9.00			
12	Ellen Bowling	553							8.84			
15	Laura L. Dunham	555							12.50			
16	O. A. Moore	560							15.64			
18	Emna Green	564							8.50			
18	E. H. Stanton	565							8.50			
20	C. V. Watts	570							8.84			
20	Lizzie Langley	572							13.50			
23	Jane Beavan	576							13.50			
25	Fannie S. Tippet	579							15.00			
25	Catharine Smith	580							8.50			
26	M. McInturf	581							8.50			
27	K. R. Barclay	583							8.50			
27	Maggie O'Leary	584							9.00			
27	Catharine Krieg	585							8.50			
28	Mary Perkins	589							8.50			
29	H. M. McAndrews	590							13.44			
30	L. M. Cross	592							34.68			
30	S. A. Wood	643							28.50			
30	Pay-roll—support.	672	\$1,453.70	\$2,549.18								
30	do	673		1,218.85	767.00							
30	do	674			507.00							
30	do	675				573.34	1,269.00	1,023.56		422.82		
30	Pay-roll—buildings and grounds	49					294.25	274.05				
30	do	221						206.43				
April 4	Etta Harrison	677							15.13			
13	Ellen Bowling	680							13.50			

[illegible]



*Itemized receipts.*

1888.

July	2.	Cash received for board of S. C. Borrows.....	\$130.00
	2.	Cash received for board and special attendance on Edw. Burchell.....	211.00
	2.	Cash received for board of E. A. Bradly .....	20.00
	2.	Cash received for board of Christian Potter.....	65.00
	6.	Cash received for board of U. S. Home patients.....	920.00
	6.	Cash received for board of S. R. Cox.....	65.00
	6.	Cash received for board of Jennie M. Lowell .....	91.00
	9.	Cash received for board of W. H. Zepp .....	182.00
	10.	Cash received for board of M. A. Gilleland.....	65.00
	11.	Cash received special attendance on Rollin Perkins.....	75.00
	11.	Cash received for board of Martha Herman .....	20.00
	16.	Cash received for board of John T. Moncrief.....	65.00
	17.	Cash received for board of C. K. Yancey.....	91.00
	20.	Cash received for board of Bryan Hall.....	65.00
	20.	Cash received for board of Herman Buchlers.....	130.00
	21.	Cash received for board of Marine Hospital Service.....	946.29
	24.	Cash received for board of M. E. Wadsworth.....	28.00
	24.	Cash received for board of John Weidman.....	91.00
	31.	Cash received for board of Chu-e-rah-rah-he-kah.....	91.00
	31.	Cash received for sale of stock, etc. ....	67.84
Aug.	2.	Cash received for board of E. A. Bradley.....	20.00
	2.	Cash received for board of A. Woodward .....	50.00
	3.	Cash received for board of Emily B. Wadsworth .....	28.00
	4.	Cash received for board of Julius Solger .....	20.00
	15.	Cash received for board of I. A. Van Brunt .....	20.00
	15.	Cash received for board of S. H. Johnson.....	7.00
	20.	Cash received for board of John C. Rives.....	30.00
	27.	Cash received for board of M. Herman.....	20.00
	28.	Cash received for board of E. A. Bradley .....	20.00
	31.	Cash received for sale of stock, etc.,.....	77.65
Sept.	3.	Cash received for board of F. W. Yager.....	91.00
	6.	Cash received for board of William H. Hindes .....	65.00
	15.	Cash received for board of William H. Hindes.....	65.00
	19.	Cash received for board of John C. Rives.....	30.00
	22.	Cash received for board of Martha Herman.....	20.00
	25.	Cash received for board of E. A. Bradley .....	20.00
	28.	Cash received for board of E. B. Wadsworth .....	28.00
	28.	Cash received for board of Adolph Berger .....	130.00
	28.	Cash received for board of Jennie M. Lowell.....	91.00
	29.	Cash received for board and special attendance on Edw. Burchell.....	211.00
	29.	Cash received for board of Lucy B. Newell .....	31.00
	29.	Cash received for board of S. R. Cox .....	65.00
	29.	Cash received for sale of stock, etc.....	85.10
Oct.	1.	Cash received for board of S. C. Borrows .....	130.00
	6.	Cash received for board of Soldiers' Home patients.....	907.86
	6.	Cash received for board of M. A. Gilleland.....	65.00
	6.	Cash received for board and special attendance on Rollin Perkins .....	75.00
	6.	Cash received for board of Bryan Hall.....	65.00
	6.	Cash received for board of H. Beuchlers .....	130.00
	10.	Cash received for board of Amon Woodward.....	20.00
	12.	Cash received for board of Warren Webster .....	364.00
	12.	Cash received for board of Christian Potter .....	65.00
	12.	Cash received for board of M. E. Cazenove .....	156.00
	12.	Cash received for board of Marine Hospital Service .....	969.43
	12.	Cash received for board of Martha Herman.....	20.00
	16.	Cash received for board of C. K. Yancey .....	91.00
	20.	Cash received for board of E. B. Wadsworth .....	28.00
	23.	Cash received for board of E. A. Bradley .....	20.00
	23.	Cash received for board of John Weidman.....	91.00
	25.	Cash received for board of J. C. Rives .....	30.00
	25.	Cash received for board of J. T. Moncrief .....	3.57
	31.	Cash received for board of Frank B. Hayes.....	65.00
	31.	Cash received for sale of stock, etc .....	26.60
Nov.	9.	Cash received for board of Amon Woodward.....	20.00
	18.	Cash received for board of Martha Herman.....	20.00
	22.	Cash received for board of Emily B. Wadsworth.....	28.00
	22.	Cash received for board of E. A. Bradley.....	20.00
	27.	Cash received for board of Chu-e-rah-rah-he-kah .....	91.00



1888.		
Nov.	30.	Cash received for sale of stock, etc..... \$350. 36
Dec.	6.	Cash received for board of William H. Hindes ..... 65. 00
	7.	Cash received for board of Amon Woodward..... 32. 00
	8.	Cash received for board of Elizabeth Howell ..... 28. 57
	19.	Cash received for board of M. E. Bradley ..... 20. 00
	29.	Cash received for board of Emily B. Wadsworth..... 28. 00
	29.	Cash received for board of Jennie M. Lowell..... 91. 00
	29.	Cash received for board of Adolph Berger ..... 65. 00
	31.	Cash received for board and special attendance on Edw. Burchell 211. 00
	31.	Cash received for board of Martha Herman..... 20. 00
	31.	Cash received for board of Sarah Cox ..... 65. 00
	31.	Cash received for board of W. H. Zepp..... 273. 00
	31.	Cash received for board of M. A. Gilleland ..... 65. 00
	31.	Cash received for board of Soldiers' home patients ..... 829. 29
	31.	Cash received for special attendance on Rollin Perkins..... 75. 00
	31.	Cash received for board of H. Beuchlers ..... 130. 00
	31.	Cash received for board of Marine Hospital Service..... 12. 50
	31.	Cash received for board of M. E. Cazenove..... 156. 00
	31.	Cash received for board of Christian Potter..... 65. 00
	31.	Cash received for sale of stock, etc ..... 103. 72
1889.		
Jany.	9.	Cash received for board of Bryan Hall..... 65. 00
	15.	Cash received for board of Marine Hospital Service..... 2. 00
	18.	Cash received for board of S. C. Borrows..... 130. 00
	21.	Cash received for board of C. K. Yancey ..... 91. 00
	21.	Cash received for board of Emily B. Wadsworth..... 28. 00
	25.	Cash received for board of Marine Hospital Service ..... 974. 57
	28.	Cash received for board of John Weidman..... 91. 00
	31.	Cash received for board of Martha Herman..... 20. 00
	31.	Cash received for sale of stock, etc ..... 122. 26
Feb'y.	4.	Cash received for board of Amon Woodward..... 20. 00
	9.	Cash received for board of Chu-e-rah-rah-he-kah ..... 91. 00
	21.	Cash received for board of E. A. Bradley..... 30. 00
	22.	Cash received for board of Martha Herman ..... 20. 00
	28.	Cash received for board of Emily B. Wadsworth..... 28. 00
	28.	Cash received for sale of stock, etc..... 168. 14
March	7.	Cash received for board of W. H. Hindes..... 65. 00
	9.	Cash received for board of Annie Young..... 14. 28
	11.	Cash received for board of Amon Woodward..... 20. 00
	20.	Cash received for board of Esau Gresham ..... 390. 00
	23.	Cash received for board of Emily B. Wadsworth ..... 28. 00
	23.	Cash received for board of Jennie M. Lowell..... 91. 00
	25.	Cash received for board of Martha Herman..... 20. 00
	26.	Cash received for board of E. A. Bradley..... 30. 00
	30.	Cash received for board and special attendance on Edw. Burchell. 211. 00
	30.	Cash received for board of Adolph Berger ..... 65. 00
	30.	Cash received for board of Sarah R. Cox..... 65. 00
	30.	Cash received for board of Elizabeth Howell..... 65. 00
	30.	Cash received for board of Amon Woodward ..... 25. 00
	30.	Cash received for board of Soldiers' Home patients..... 771. 43
	30.	Cash received for board of M. A. Gilleland..... 65. 00
	30.	Cash received for board of Elizabeth Howell..... 1. 43
	30.	Cash received for board of M. E. Cazenove..... 156. 00
	30.	Cash received for board and special attendance on Rollin Perkins 75. 00
	30.	Cash received for board of Marine Hospital Service..... 897. 43
	30.	Cash received for board of Herman Buchlers ..... 130. 00
	30.	Cash received for board of Bryan Hall ..... 65. 00
	30.	Cash received for sale of stock, etc..... 193. 53
April	13.	Cash received for board of W. H. Zepp..... 91. 00
	16.	Cash received for board of Christian Potter ..... 65. 00
	17.	Cash received for board of Ida Van Brunt ..... 20. 00
	19.	Cash received for board of S. C. Borrows..... 130. 00
	19.	Cash received for board of John Weidman ..... 91. 00
	22.	Cash received for board of C. K. Yancey ..... 91. 00
	22.	Cash received for board of Emily B. Wadsworth ..... 28. 00
	27.	Cash received for board of Chu-e-rah-rah-he-kah..... 91. 00
	27.	Cash received for board of Martha Herman ..... 20. 00
	30.	Cash received for sale of stock, etc ..... 324. 27
May	6.	Cash received for board of Amon Woodward ..... 20. 00



1889.

May	23.	Cash received for board of F. W. Yager.....	\$155.00
	24.	Cash received for board of E. A. Bradley.....	50.00
	25.	Cash received for board of Emily B. Wadsworth.....	28.00
	26.	Cash received for board of Martha Herman.....	20.00
	28.	Cash received for board of M. E. Cazenove.....	156.00
	31.	Cash received for board of William H. Hindes.....	65.00
	31.	Cash received for sale of stock, etc.....	238.39
June	8.	Cash received for board of Amon Woodward.....	20.00
	12.	Cash received for board of Emily B. Wadsworth.....	28.00
	15.	Cash received for board of J. M. Lowell.....	91.00
	15.	Cash received for board of Martha Herman.....	28.00
	29.	Cash received for board and special attendance on Edw. Burchell.....	211.00
	29.	Cash received for board of Lucy B. Newell.....	160.00
	29.	Cash received for board of M. A. Gilleland.....	65.00
	29.	Cash received for board of Christian Potter.....	65.00
	29.	Cash received for board of Amon Woodward.....	75.00
	29.	Cash received for board and special attendance on Rollin Perkins.....	75.00
	29.	Cash received for board and special attendance on G. Rockwood.....	10.00
	29.	Cash received for board of Bryan Hall.....	65.00
	29.	Cash received for board of Herman Buchlers.....	130.00
	29.	Cash received for board of Sarah R. Cox.....	65.00
	29.	Cash received for board of United States Soldiers' Home patients.....	776.43
	29.	Cash received for board of W. H. Zepp.....	91.00
	29.	Cash received for board of Emily B. Wadsworth.....	28.00
	29.	Cash received for board of William Griffiths.....	455.00
	29.	Cash received for board of C. K. Yancey.....	91.00
	29.	Cash received for board of S. C. Borrows.....	130.00
	29.	Cash received for board of Marine Hospital service.....	1,001.56
	29.	Cash received for sale of stock, etc.....	575.40
	29.	Cash received for board of Frank B. Hayes.....	130.00
	29.	Cash received for board of J. V. Lewis.....	65.00
	29.	Cash received for board of D. L. Kraft.....	96.00
Total .....			22,366.90

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PATHOLOGICAL SUPPLEMENT

TO THE

THIRTY-FOURTH ANNUAL REPORT

OF THE

GOVERNMENT HOSPITAL FOR THE INSANE

TO THE

SECRETARY OF THE INTERIOR.

1889.

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REPORT OF POST-MORTEM EXAMINATIONS IN TWENTY-NINE  
CASES OF MENTAL DISEASE:

PART I. Fifteen cases of General Paralysis, and three cases of Acute Organic Dementia.

PART II. Eight cases of Acute Mania, and three cases of Acute Insanity with maniacal symptoms, dependent upon organic brain disease.





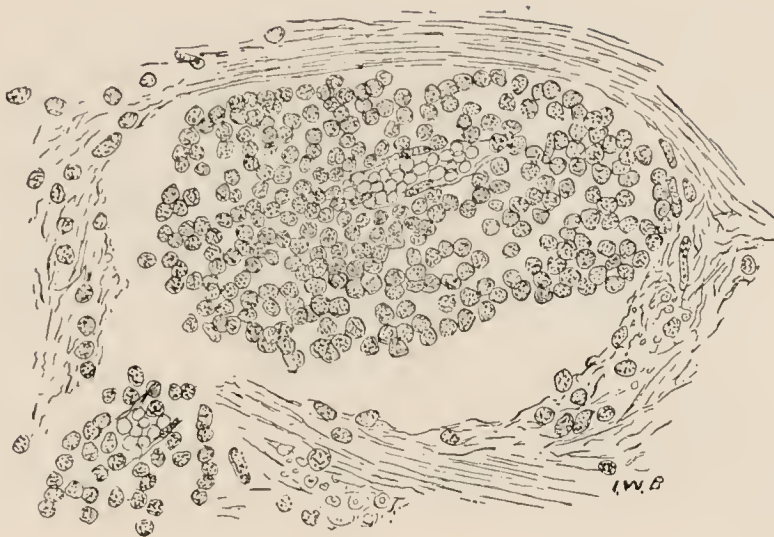


FIG. 1. Vessel from the medulla oblongata.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)



FIG. 2. Small vessel from the gray matter of the cervical cord.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)



FIG. 3. Small vessel with thickened wall and the lumen nearly obliterated. Spider cell near the wall.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)





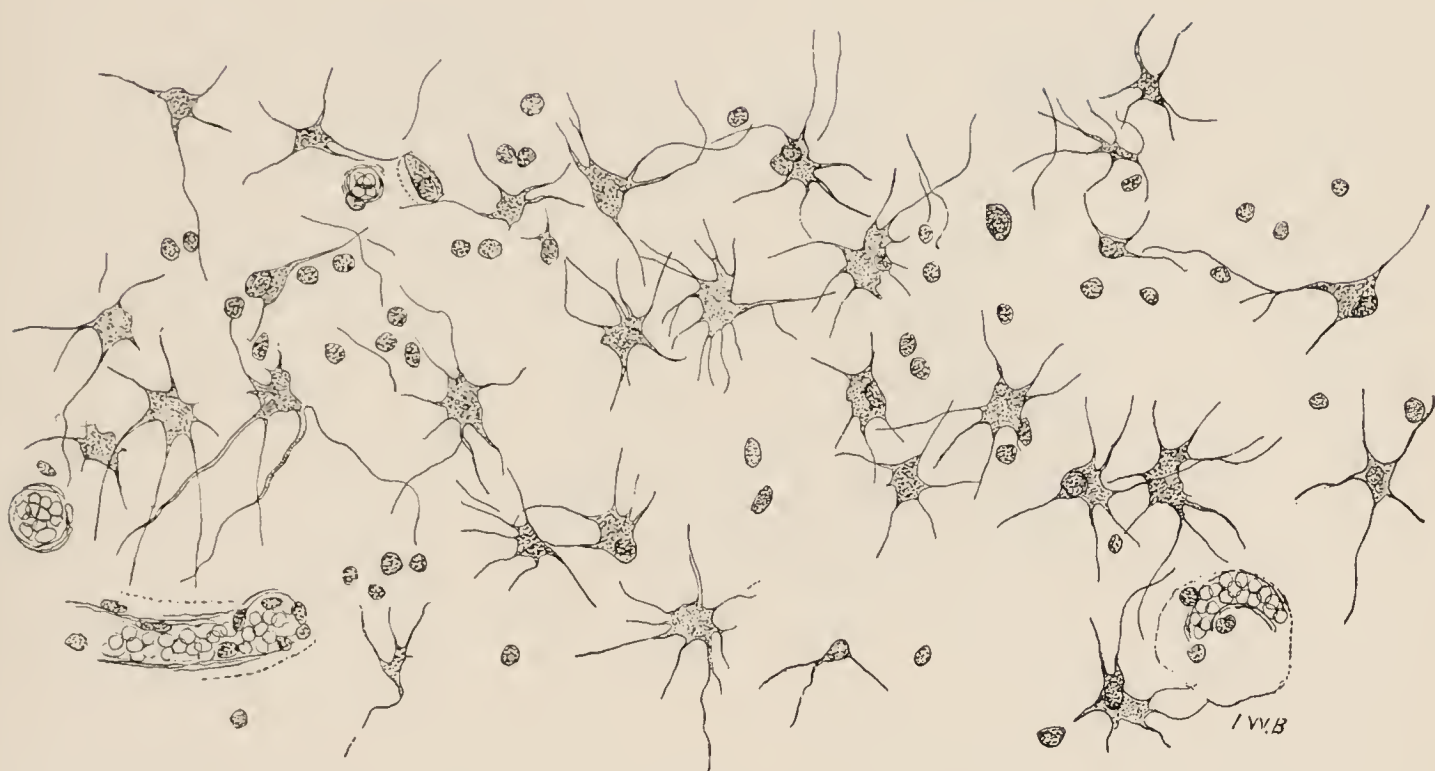


FIG. 4. Group of spider cells from the hippocampus major, central portion.  $\times 250$ . (Reduced  $\frac{1}{8}$ .)



FIG. 5. Spider cells among the large pyramidal cells of the hippocampus major.  $\times 250$ . (Reduced  $\frac{1}{8}$ .)







FIG. 6. Spider cells among the nerve cells of the stratum radiatum of the hippocampus major.  $\times 250$   
(Reduced  $\frac{1}{5}$ .)

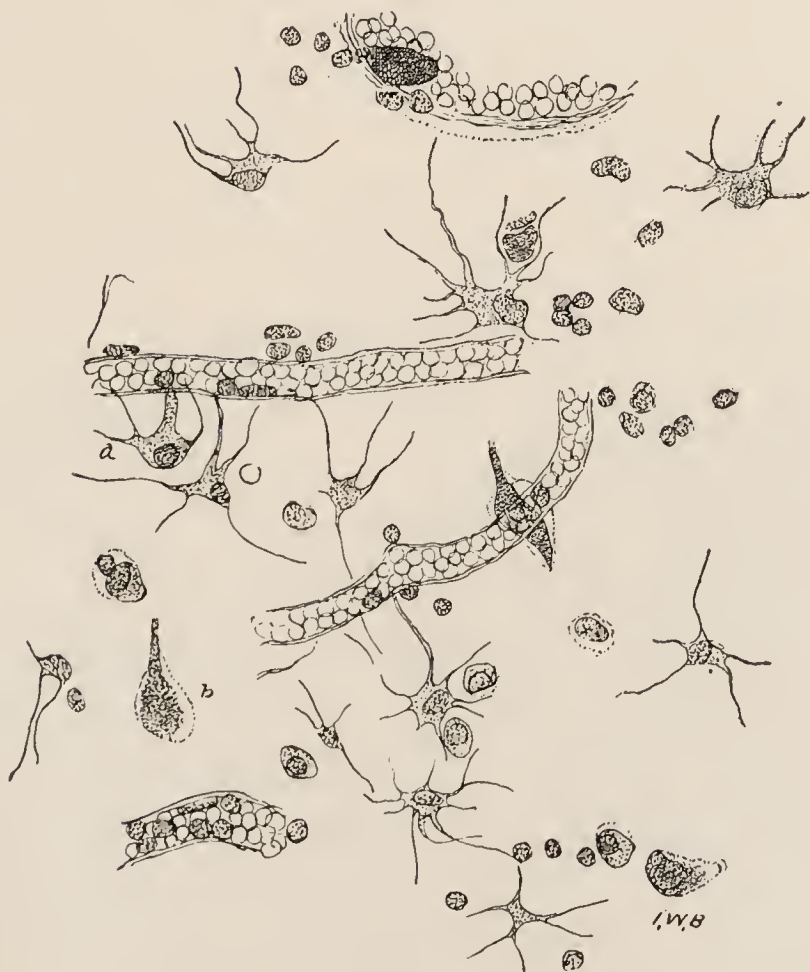


FIG. 7. Spider cells from the gyrus fornicatus.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)





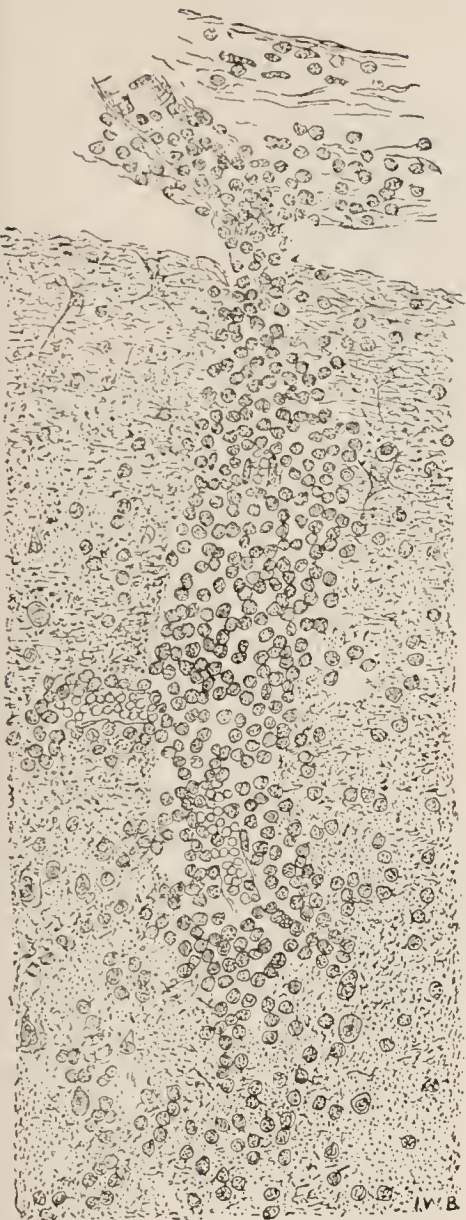


FIG. 8. Diseased vessel and pia mater from the occipital lobe.  $\times 200$ . (Reduced  $\frac{1}{5}$ .)

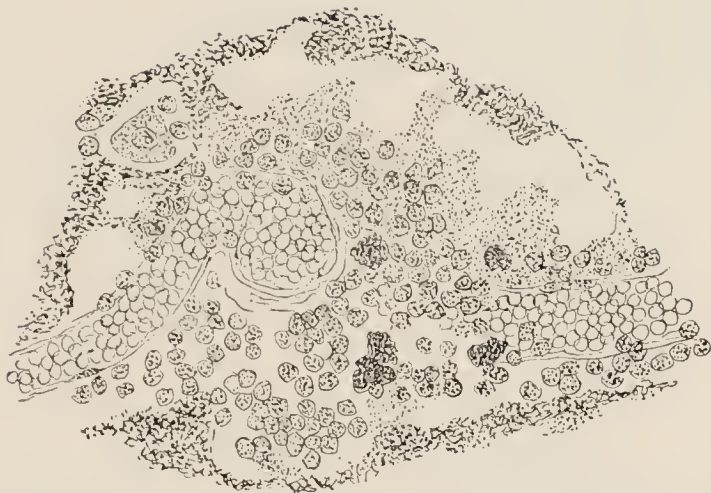


FIG. 10. Tortuous vessel cut in different directions.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)



FIG. 9. Small vessel cut in many directions.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)

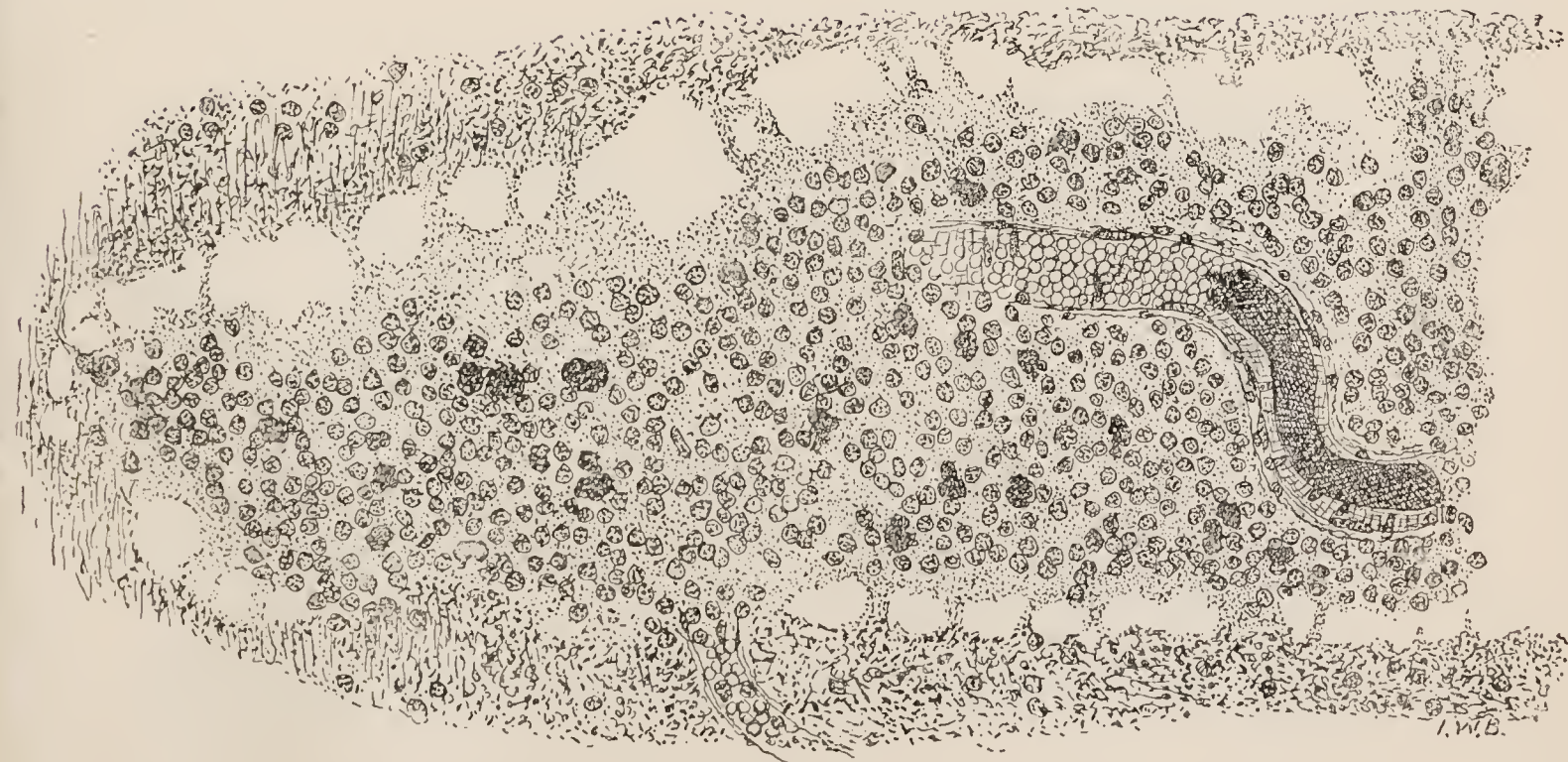


FIG. 11. Small arteriole in the cortex of the motor region.  $\times 200$ .







FIG. 12. Small artery within large perivascular space; spider cells in the vicinity.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)

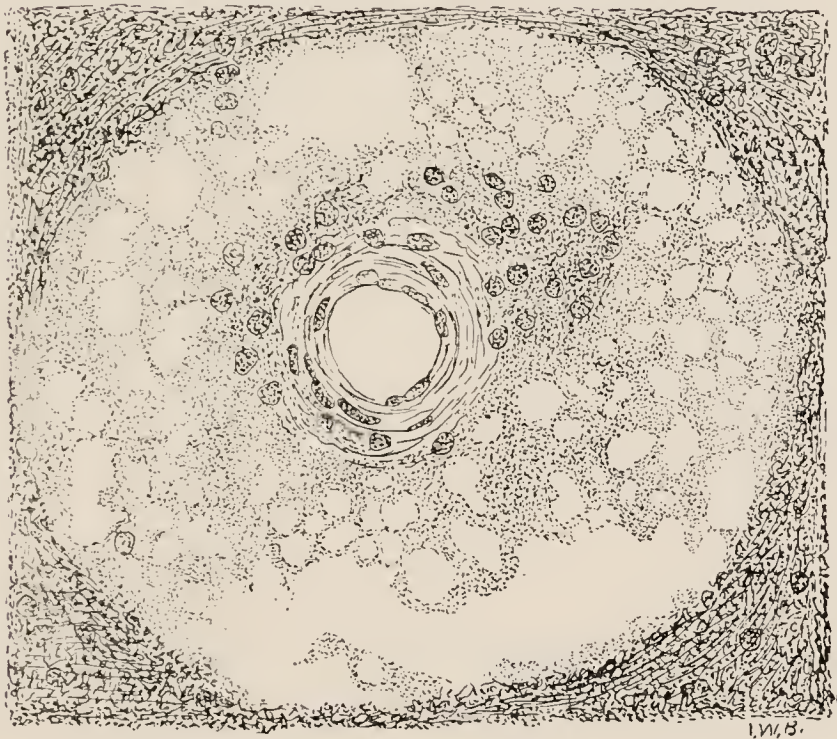


FIG. 13. Small artery from the white substance, with enlarged perivascular space.  $\times 300$ . (Reduced  $\frac{1}{5}$ .)

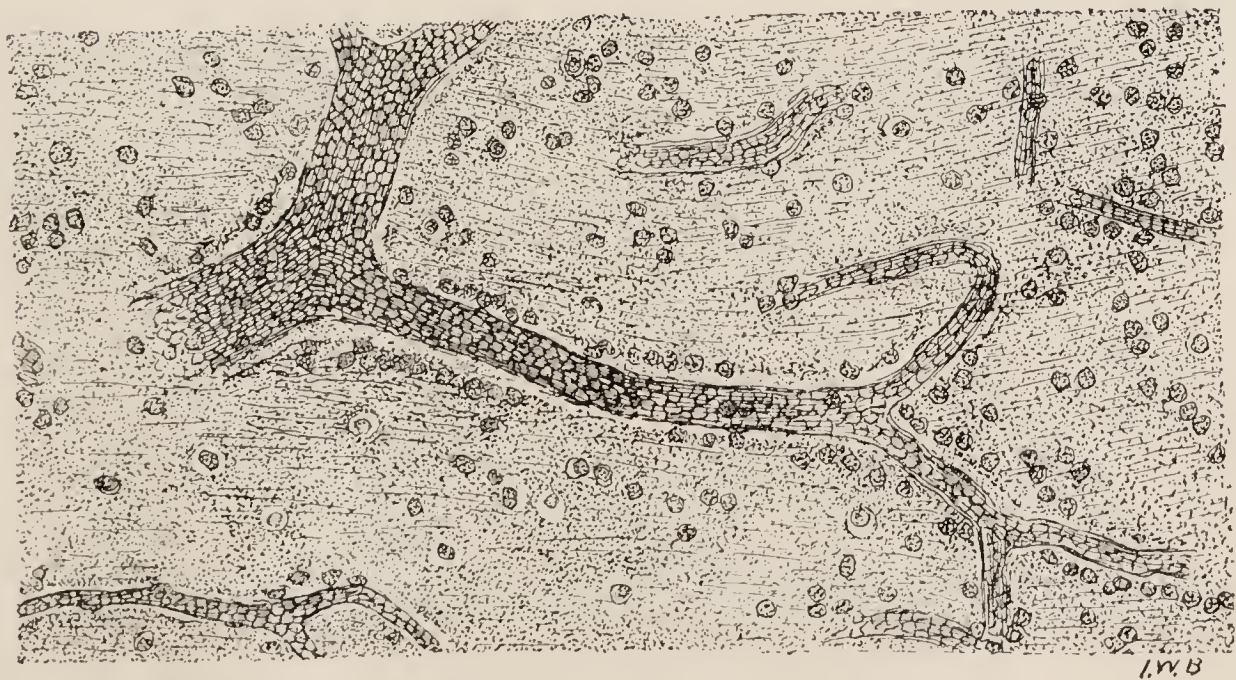


FIG. 14. Field from white substance of third frontal convolution. Dementia.  $\times 250$ . (Reduced  $\frac{1}{5}$ .)





## DESCRIPTION OF DRAWINGS.

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CASE 217, FIG. 1. Small vessel from the medulla oblongata, showing an enlarged perivascular space and an accumulation of leucocytes around the vessel.

CASE 217, FIG. 2. Small vein from the grey matter of the spinal cord, showing nuclear proliferation in the adventitia, and enlargement of the perivascular space.

CASE 222, FIG. 3. Small vessel in the cortex almost obliterated by growth of nuclei around it. Large spider cell, and granular nerve cells in the vicinity.

CASE 224, FIG. 4. Group of spider cells from the central portion of the hippocampus major. Basis substance not represented.

CASE 224, FIG. 5. Spider cells among the large pyramidal cells of the hippocampus major. Some of the nerve cells are shrunken (*a*), granular (*b*), and several of the spider cells are in connection with the wall of a capillary. Basis substance omitted.

CASE 224, FIG. 6. Spider cells and shrunken nerve cells from the stratum radiatum of the hippocampus major. The nerve cells were reduced in number, yellow, and the nuclei stained deeply.

CASE 230, FIG. 7. Field from the gyrus fornicatus, showing spider cells in connection with capillaries (*a*), shrunken and granular nerve cells (*b*), and a small homogeneous thrombus within a vein. Basis substance not drawn.

CASE 240, FIG. 8. A field from the occipital lobe, showing a diseased vessel in connection with the infiltrated pia mater, and spider cells in the outer layer of the cortex.

CASE 240, FIG. 9. A small tortuous vessel from the occipital lobe, cut in many directions.

CASE 240, FIG. 10. A small cortical vessel surrounded by cells, granular material, and pigment masses, and cut in a peculiar manner. Occipital lobe.

CASE 251, FIG. 11. A small curved arteriole in the cortex of the paracentral lobule, showing a thrombus within the curve of the vessel, and a greatly enlarged perivascular space filled with cells, granular material, and pigment masses.

CASE 251, FIG. 12. A small artery with enlarged perivascular space, and surrounded by a mass of granular material and a few cells. Four spider cells are seen in the vicinity, one of which sends a long process to the vessel. Inner portion of cortex of temporal lobe.

CASE 251, FIG. 13. Small artery with enlarged perivascular space filled with finely granular material, full of vacuoles; and a few cells around the vessel. (The nature of the granular material is not clearly determined, but the appearance is a very common one in cases of general paralysis, in which these spaces are visible to the naked eye.)

FIG. 14. This field was drawn from a section of the third frontal convolution, of a case of dementia. The vessels may be considered normal though filled with blood. Healthy cerebral vessels often show as many nuclei along the vessels as are seen in the drawing. The drawing was introduced to contrast the vessels and perivascular spaces with those of paresis.



## APPENDIX A.

### PART I.

#### Case 218. (On post-mortem records.)

B. F.; aged 37; female; colored; single; nativity, United States. This case was somewhat obscure in its early stages, but finally developed into a typical case of paresis. The history previous to admission could not be obtained, but the duration of the disease was probably over two years. The cause was unknown. The physical symptoms were more characteristic than the mental. Convulsions were frequent and death occurred from exhaustion and tuberculosis.

Autopsy, fifteen hours after death. Body, emaciated.

Cranium: Antero-posterior diameter, 7 inches; transverse,  $5\frac{1}{4}$  inches. Skull, small, but of the usual thickness; the bone seemed harder than normal; dura mater, normal.

Brain: Weight,  $37\frac{1}{2}$  ounces; slight opacity of pia arachnoid. Convolutions atrophied over the greater portion of the convexity, but especially the anterior extremities of the frontal and temporo-sphenoidal lobes. The consistence of the brain tissue was diminished; the cortex was thinned in the atrophied regions; the puncta vasculosa were somewhat prominent, and in some places the white substance presented a cribiform appearance from dilatation of the perivascular spaces; a similar condition was observed in the vessels of the cerebellum. Pia adhered slightly to the cortex, but could be removed without tearing the brain substance.

Lungs: Pleuritic adhesions and tuberculosis.

Heart, normal; spleen, normal to unaided eye.

Kidneys and liver were slightly contracted.

Uterus contained two fibroid tumors.

#### MICROSCOPICAL EXAMINATION.

Brain: Pia mater moderately infiltrated with lymphoid cells, and the small vessels of pia and cortex were filled with blood, and their coats thickened by proliferation of nuclei. Many vessels were very tortuous, and were cut in all directions in the sections; the perivascular spaces were enlarged, and contained free cells and yellow pigment granules.

The outer layer of the cortex was fibrous and contained small stellate cells, and these were also found scattered elsewhere in the cortex and subjacent white substance. The nerve cells were not greatly changed; some were unusually yellow and granular, but many appeared normal. The pericellular spaces were enlarged. The pia mater and vessels of the cerebellum showed changes similar to those of the cerebrum but of a less degree.

Slight nuclear proliferation was found in the vessels of the medulla, and the central canal of the spinal cord was not obliterated, otherwise these parts seemed normal.

Lungs showed the usual appearance of acute phthisis.

Spleen contained many miliary tubercles.

Liver, slightly cirrhotic, and filled with miliary tubercles.

Kidneys, slight increase of connective tissue.

#### Case 219.

J. T. C.; aged 37; married; druggist; nativity, United States. This was a typical case of paresis supposed to have been caused by syphilis. The duration was three years, and death was by exhaustion from the progress of the disease.

Autopsy, forty-eight hours after death. Body well nourished.



Cranium: Antero-posterior diameter,  $7\frac{5}{8}$  inches; transverse,  $5\frac{3}{4}$  inches. Skull, normal. Internal pachy-meningitis covering almost the whole cerebral dura.

Brain: Weight, 46 ounces. Great opacity and thickening of the pia arachnoid over the greater part of the brain. The convolutions were generally shrunken but especially those of the frontal and anterior temporo-sphenoidal regions. The brain substance was soft and there was some adhesion of membranes in the frontal regions. On section the cortex seemed thin over the atrophied convolutions; the puncta vasculosa prominent; and the perivascular spaces were visible to the naked eye. The ventricles were greatly dilated and the ependyma granular. The organ was flabby and when the ventricles were empty, sank under its own weight. The puncta vasculosa of cerebellum, pons, and medulla, were prominent and the white substance was darker than usual.

Lungs: Pleuritic adhesions, hypostasis, and a few caseous and calcareous nodules at the apices.

Heart, normal. Spleen small, soft, and pale.

Kidneys slightly contracted; other organs normal to naked eye.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was greatly thickened and its deeper layers infiltrated with round cells, and red blood corpuscles.

The vessels of the brain tissue were tortuous and distorted and great accumulation of cells had occurred in their walls and enlarged perivascular spaces. Large masses of brownish-yellow pigment were found in the thickened coats of the vessels, in the pia mater, and in the perivascular spaces of the brain. In a few of the medium-sized arteries a glassy appearance of the wall was observed. In some parts the vessels seemed to be unusually numerous.

The outer layer of the cortex contained a few small, branched cells, and some were found in other parts of the brain; they were most numerous in the hippocampal region.

The nerve cells were yellow, their protoplasm granular, and the pericellular spaces were very large.

The most decided changes were found in the hippocampus major and the gyrus hippocampi, and the occipital lobes were the least affected.

The vessels of the cerebellum were full of blood, but the organ was otherwise normal.

The vessels of the medulla and cord presented changes similar to those of the brain. The nerve cells were yellow and granular, and in a few the nuclei were obscured. The floor of the fourth ventricle was granulated and the spinal canal partly obliterated.

Lungs: Tubercular deposits in the apices.

Kidneys: Moderate interstitial nephritis.

Liver: Slight passive congestion and fatty infiltration.

#### Case 220.

J. D. S.; aged 51; colored; married; harness maker; nativity, United States. This case was probably an irregular form of paresis though the symptoms were not characteristic. He had apoplectiform attacks, impairment of muscular power, and partial aphasia. The mental signs were not observed on account of the dementia at the time of admission. The cause given was injury to head and loss of work. Duration was supposed to be about one year. Death occurred during an apoplectiform convulsion.

Autopsy, forty-eight hours after death. Body fairly nourished; skin covered with white patches—vitiligo.

Cranium: Antero-posterior diameter,  $7\frac{1}{2}$  inches; transverse,  $5\frac{1}{4}$  inches. Skull thinner than usual and the arterial depressions deep and tortuous. Dura slightly adherent to the bone.

Brain: Weight, 45 ounces. Pia arachnoid was slightly opaque over the superior regions of the convexity. The convolutions were moderately shrunken. The consistence of the brain substance reduced. The arteries of the circle of Willis were irregular in development and showed slight atheroma. Ventricles and ependyma appeared normal.

Lungs, hypostatic; slight valvular disease of heart, and atheroma of the aorta. Other organs apparently normal.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater showed moderate multiplication of nuclei, and the vessels of the brain had retained their contents; their walls were thickened by nuclei, and within the enlarged perivascular spaces were free leucocytes, red blood cells, and pig-



ment granules. In the vicinity of some of the diseased vessels a few spider cells were found.

The nerve cells were in the various stages of yellow granular degeneration, but many appeared normal.

The vessels of cerebellum and medulla showed traces of nuclear increase, and in the medulla were a few yellow shrunken cells, and others with patches of yellow pigment exceeding the normal in size.

The other organs presented microscopical changes, but nothing of special importance.

### Case 222.

J. F.; aged 49; widower; sailor; nativity, United States. The symptoms in this case were characteristic, though the disease had existed some time before admission. The duration was about four and a half years, and death was caused by bulbar paralysis.

Autopsy, thirteen and a half hours after death. Body well nourished; bed sores over sacrum.

Cranium: Antero-posterior diameter,  $7\frac{1}{4}$  inches; transverse,  $5\frac{5}{8}$  inches. Skull and dura normal.

Brain: Weight,  $44\frac{1}{4}$  ounces. Diffused opacity of pia arachnoid and adhesion of the membranes of the median surfaces in the frontal region. Convolutions of the frontal and middle regions shrunken and the brain flabby, soft, and œdematous. On removal of the pia mater some decortication occurred over the summits of the convolutions.

The ventricles were slightly dilated and the ependyma was granulated. The puncta vasculosa were prominent in the posterior portions, and a few small hemorrhages were found.

Lungs: Pleuritic adhesions and hypostatic congestion.

Heart: Slight valvular disease and some fatty degeneration of the intima of the aorta. Other organs presented nothing unusual.

### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was infiltrated with nuclei, and in the vicinity of the vessels were large masses of brownish pigment and free blood corpuscles. Small hemorrhages were numerous in both membranes and brain substance.

The vessels of the cortex, and to a less degree those of the white substance, were distorted, their walls thickened by proliferation of nuclei, and the perivascular spaces were enlarged and filled with free cells, blood corpuscles, and pigment granules. The brain tissue in the vicinity of some of the vessels showed an increased number of neuroglial nuclei.

The outer layer of the cortex was fibrous and contained many spider-cells, and these cells were found throughout the cortex and in the outer portion of the white substance. The spider-cells were more numerous in the vicinity of diseased vessels, and frequently a large branch was seen to join the wall of a vessel.

The nerve-cells were yellowish, granular, and crumbled, and the pericellular spaces were enlarged. The nerve-cells of the hippocampus major presented the above changes in a marked degree.

The vessels of cerebellum, pons, medulla, and cord showed changes similar to those of the brain, and the nerve-cells of medulla and cord were yellow and granular. The floor of the fourth ventricle was slightly granulated, and the central canal of the spinal cord was closed.

The lungs showed passive congestion and exudation.

The liver was slightly congested, and the cells pigmented.

Other organs corresponded with the naked-eye appearances.

### Case 224.

J. A. G.; aged 51; single; soldier; nativity, United States. This case presented many of the characteristics of epileptic insanity. The convulsions occurred late in life, were decidedly epileptiform, and were supposed to be due to organic disease of the brain, of specific origin. The convulsions were frequent; there was slight general ataxia and progressive dementia, and the disease terminated in bulbar paralysis after a duration of over two years.

In view of the supposed relation of lesions of the cornu ammonis to epilepsy, the localization of the greatest intensity of the disease in this region becomes of some interest.

Autopsy nine hours after death. Body well nourished.



Cranium: Antero-posterior diameter,  $7\frac{1}{4}$  inches; transverse,  $5\frac{5}{8}$  inches. The skull was peculiar in shape, the outline of the fronto-occipital circumference being nearly a perfect ellipse. Slight internal pachymeningitis over the whole right side and base.

Brain: Weight, 47 ounces. Opacity and thickening of pia arachnoid over the anterior and middle regions of the convexity; veins full of blood; no adhesions to cortex of convexity. Convolutions moderately shrunken over the fronto-parietal convexity and median surface in the anterior portion. Ventricles dilated; ependyma granular, especially in the fourth ventricle. The cortex was mottled, with reddish areas; the puncta vasculosa prominent, and the white substance œdematous. Nothing unusual was noticed in other parts of the brain.

Lungs, hypostatic. Nothing of importance was observed in the other organs.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was thickened, and around the vessels were accumulations of nuclei. Sections from the anterior, middle, occipital, and temporal regions showed but little change in the vessels. Some were much distorted and tortuous in their course, but there was not much cellular proliferation in their walls and perivascular spaces. The outer layer of the cortex was coarsely fibrous, and a few branched cells were found; and a few such cells were found in other parts of the cortex of the convexity. The nerve-cells were yellow, granular, and the margins more or less disintegrated. The pericellular spaces were enlarged.

In the hippocampal region a great degree of change was found in vessels and cells. The vessel walls were greatly thickened by proliferation of nuclei in their walls, and in some the lumen was nearly obliterated. Large accumulations of cells, pigment, and red blood corpuscles were found around nearly all the vessels, and in some places nuclear infiltration had extended for some distance around into the brain substance.

Great numbers of spider-cells were found in this region, especially in the stratum radiatum of the hippocampus major. The cells of this layer were yellow, attenuated, and their number apparently diminished.

The cerebellum showed but little evidence of disease. A few more nuclei than normal were seen along some of the vessels, and they were full of blood.

The medulla was but little altered; the vessels were full of blood, and a few small hemorrhages were found. The nerve-cells did not stain well, and a few were very granular.

The spinal cord showed slight hyperplasia of the neuroglia in the posterior columns. The cells were not appreciably changed. The spinal canal was obliterated.

Lungs and spleen showed passive congestion. Other organs presented nothing abnormal.

#### Case 226.

A. M. W. F.; aged 32; female; married; nativity, United States. Maniacal symptoms were very prominent when first admitted, but subsequently delusions of wealth, motor disturbances, and other symptoms of general paralysis appeared. The cause was unknown. The duration was about five years, and the disease terminated in complete physical and mental paralysis. Death occurred in an epileptiform convulsion.

Autopsy, eighteen hours after death. Body emaciated; decomposition commencing.

Cranium: Antero-posterior diameter,  $6\frac{5}{8}$  inches; transverse diameter, 5 inches. Skull symmetrical, but unusually small; dura mater, normal.

Brain: Weight, 30 ounces. Pia arachnoid opaque, thickened, œdematous, and the veins engorged. The membrane was not adherent to the convolutions. There was general atrophy of the convolutions, but greater in the anterior portion of the brain. The ventricles were dilated and the ependyma granulated. Vessels at the base normal.

Lungs, heart, spleen, and liver were not in any way remarkable. Uterus and appendages normal.

The kidneys were slightly contracted. Evidences of a former perityphlitis.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was densely infiltrated with nuclei and extravasated red blood cells.

The vessels of the brain showed great accumulation of nuclei and pigment granules in their walls and perivascular spaces. Many vessels were filled with blood, and rupture and escape of blood into the perivascular spaces was frequently observed. The brain tissue near some of the diseased vessels was richly cellular, and in some places



the cortex blended with the vessel walls, or the pia mater, by continuous cell growth. The outer layer of the cortex was fibrous and contained round nuclei and small spider-cells in great numbers. The spider-cells were found throughout the cortex and the subjacent white substance; especially were they numerous in the frontal regions where the greatest intensity of the disease was found.

The nerve-cells showed the various stages of granular degeneration. Many cells, however, appeared perfectly normal.

The pia mater of the cerebellum, medulla, and spinal cord was moderately beset with nuclei, and the blood vessels were full of blood and showed traces of change similar to those of the cerebrum. The lining of the fourth ventricle was thickened and granulated, and the central canal of the spinal cord was open. The nerve-cells of these parts showed no definite changes.

Kidneys: Slight increase of connective tissue.

### Case 230.

H. A.; aged 37; single; soldier; nativity, Prussia. This was a typical case of paresis, and the cause assigned was syphilis. The symptoms were characteristic and the facial expression typical. The duration was eighteen months, and the disease terminated in death from bulbar paralysis.

Autopsy, three hours after death. Body well nourished.

Cranium: Antero-posterior diameter  $7\frac{1}{4}$  inches, transverse 6 inches. Skull normal except congestion of the diploe; dura mater normal.

Brain: Weight  $47\frac{1}{2}$  ounces. Pia arachnoid exhibited a few patches of opacity, was slightly thickened but not adherent to cortex. In the fronto-parietal and orbital regions the convolutions were extremely atrophied and distinctly hardened. The right hemisphere was more shrunken than the left. The gray substance everywhere presented a mottled appearance from darker, alternating with lighter areas, the puncta vasculosa were prominent and the white substance was œdematous. The vessels at the base of brain were slightly atheromatous.

The other organs were not all normal, but presented no noteworthy appearances.

### MICROSCOPICAL EXAMINATION.

Brain. The pia mater in the region of the vessels was richly nuclear; the vessels were filled with blood; red blood cells were extravasated, and within some of the vessels were small, homogeneous, darkly-stained masses, probably thrombi. The cerebral vessels of greater part of the convexity showed but little change, the most noticeable being distension of the lumen by red blood cells, which had frequently escaped into the perivascular spaces. There was but little nuclear proliferation in or around the vessel walls, but many were very tortuous, and the perivascular spaces were widened. Yellow pigment masses were very numerous along the line of the vessels.

The outer layer of the cortex was fibrous, and a few small branched cells were found within it; but in the deeper layers of the greater part of the cortex they were rarely discovered.

In the frontal region above and below, and in the gyrus fornicatus, more decided changes were found.

Spider-cells were found in great numbers, and the vessels presented the nuclear proliferation usually seen.

The nerve-cells were yellowish; the bodies of some were disintegrated, but the changes were not very decided.

Other regions of the cerebral cortex, the cerebellum, pons, medulla, and cord, showed fullness of the vessels and traces of multiplication of nuclei. The nerve-cells showed nothing but a few brownish granular cells in the medulla. Scattered spider-cells were found in medulla and cord.

The floor of the fourth ventricle was faintly granulated, and the central canal of the spinal cord was open.

The microscopical appearances of other organs were unimportant.

### Case 231.

M. W.; aged 36; female; colored; married; nativity, United States. When this patient was admitted the disease was in the early stages, and melancholia was the most prominent symptom. She had delusions in regard to the abdominal viscera, and tried to injure herself. Later on the symptoms of paresis became more characteristic, but the physical were more so than the mental. The duration was unknown, but she was in the hospital eighteen months. Convulsions and paralyzes were pres-



ent in the later periods, and death occurred from exhaustion and gangrene of the lungs.

Autopsy, fifteen hours after death. Body much emaciated; large bed sore over sacral region.

Cranium: Antero-posterior diameter, 7 inches; transverse,  $5\frac{1}{2}$  inches. Skull, thick and dense, and the sutures were not visible in the inner table. The dura mater showed internal pachymeningitis extending over the left side and part of the middle cerebral fossa.

Brain: Weight, 37 ounces. The pia arachnoid was but slightly opaque and was not adherent to the cortex. The convolutions were shrunken over the whole cerebral surface, but less so in the occipital regions. The cortex was yellowish, anæmic, and soft. The ventricles were slightly dilated, and the ependyma granulated. The cortex of the cerebellum was yellowish and the consistence of the organ reduced.

Lungs: A gangrenous center was found in the upper lobe of the left lung, and the greater portion of the lung was solidified.

Heart, atrophied. Other organs free from gross lesions.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was irregularly infiltrated with nuclei in its deeper layers and around the vessels. The vessels of the brain substance had greatly thickened walls from proliferation of nuclei, and in the enlarged perivascular spaces great accumulations of nuclei, pigment, and red blood-cells were found. Some of the small arteries were much convoluted and were cut in all directions in the sections. A few were seen with a glassy, hyaline appearance of their middle coats. The greatest change in the vessels was located in the tips of the temporal lobes.

The outer edge of the cortex was coarsely fibrous, and had numerous spider cells. Large, cloudy, faintly-branched cells were found in cortex and white substance; by careful study these were found to be identical with Deiter's cells. In some portions of the white matter these swollen cells were very numerous, and they passed by all gradations into the usual spider-shaped cells of the cortex.

The nerve cells were yellow and attenuated in all parts of the brain. The pericellular spaces were enlarged.

The cerebellum, medulla, and cord showed a slight degree of nuclear increase about the vessels and membranes. The nerve cells were quite yellow, and in the medulla were some cells entirely converted into brownish granules. Small granulations in the floor of the fourth ventricle. Spinal canal obliterated.

Lungs: Acute secondary pneumonia of left.

Liver: Slight passive congestion and pigmentation of the cells.

Kidneys: Connective tissue somewhat increased and the cells crumbled.

#### Case 237.

F. S.; aged 46; married; boatman; nativity, United States. This case was considered typical. The cause given was sunstroke. Duration, six years. Immediate cause of death, bulbar paralysis.

Autopsy, ninety hours after death. Body well nourished; bed-sores over sacrum and trochanters.

Cranium: Antero-posterior diameter, 7 inches; transverse, 6 inches. Diploe congested and the small veins of inner table enlarged, making peculiar linear and stellate markings. Internal pachymeningitis of right side.

Brain: Weight,  $45\frac{1}{2}$  ounces. Slight opacity of pia arachnoid in the vicinity of the veins. Median surfaces coherent in the frontal regions, and the membranes adhered slightly to the summits of the convolutions. Over the fronto-parietal regions and the anterior median surfaces the convolutions were shrunken. The cerebral arteries normal. The ventricles were dilated; the ependyma smooth, except in the fourth, where it was faintly granular. The brain was soft, probably post-mortem change.

Lungs: Pleuritic adhesions and hypostasis.

Spleen: Showed chronic perisplenitis.

Other organs presented nothing unusual.

#### MICROSCOPICAL EXAMINATION.

Brain: Nuclear proliferation around the veins of the pia mater. The cerebral vessels were tortuous, thickly coated with leucocytes, and within the widened perivascular spaces were free cells, extravasated blood cells, and yellow pigment.

The outer layer of the cortex exhibited a fibrous appearance, and a few small branched cells were found.



The nerve cells were remarkably well preserved for so long after death. Nothing abnormal was observed, except a degree of yellowness, slightly exceeding the normal.

Their shapes were preserved and scarcely any crumbling was noticed. The vessels of the cerebellum and medulla were slightly diseased, but the cells showed nothing but slight yellow opacity.

### Case 240.

B. W.; aged 33; marine, U. S. Navy; nativity, Scotland. The physical symptoms were typical; the mental, less characteristic. The cause assigned was syphilis, and the duration was twenty months. There were delusions of apprehension and depression, glosso-labial paralysis, general ataxia, and finally epileptiform convulsions, in which death occurred.

Autopsy, thirteen hours after death. Body fairly well nourished.

Cranium: Antero-posterior diameter,  $7\frac{1}{2}$  inches; transverse,  $5\frac{3}{8}$  inches. Skull, normal; dura mater showed a rusty color, due to early internal pachymeningitis.

Brain: Weight,  $47\frac{1}{2}$  ounces. Subdural space dry, and the surface of the arachnoid slightly sticky. A small area over the sphenoid bone, and one over the cavernous sinus, adhered to the dura mater. The pia was slightly opaque, but not adherent to the convolutions. There was slight atrophy of the convolutions; the cortex was mottled with reddish areas; puncta vasculosa prominent, and the consistence was reduced. The ventricles were moderately dilated, and the ependyma faintly granulated. Pia of pons, medulla, and cerebellum, opaque.

Lungs showed the various appearances of the early stages of pneumonia.

Heart: Mitral valve slightly diseased.

Other organs appeared normal.

### MICROSCOPIC EXAMINATION.

Brain: Moderate increase of nuclei in the pia mater; some extravasation of red blood cells, and coagula within some of the vessels. In the brain tissue the vessel walls were much thickened by nuclear growth; the perivascular spaces greatly enlarged and filled with free cells, red blood-corpuscles, and pigment. Small homogeneous masses, which, stained deeply in carmine, were found in many of the vessels, and recent coagula in some. Many of the vessels were tortuous in their course, and were cut in many directions.

The outer layer of the cortex contained a few spider cells, and throughout the cortex and portions of the white substance were cloudy indistinctly branched or round cells of the same character. In some places near the vessels the brain substance was rich in nuclei, blending with the cell growth around the vessels.

The brain cells were generally well shaped and natural in appearance, but many yellow, granular, and disintegrated cells were found. The pericellular spaces were enlarged.

There was slight change in the cerebellum of the same character as that of the cerebrum, but no spider cells.

The vessels of medulla and cord were almost the same as those of the brain. The nerve cells were, some of them, yellow and opaque; a few in the medulla were totally degenerated. Some small granulations in the ependyma of the fourth ventricle, and the spinal canal obliterated.

Examination of the other organs confirmed the naked-eye diagnosis.

### Case 251.

L. F.; aged, 22; female; colored; single; domestic; nativity, United States. History, previous to admission, could not be obtained, but the duration was probably two years. The cause was unknown. The physical symptoms were more typical than the mental, the latter being melancholic in character. Motor paralysis became general and death occurred in epileptiform convulsions.

Autopsy, twenty-five hours after death. Body well nourished.

Cranium: Antero-posterior diameter,  $7\frac{1}{2}$  inches; transverse, 5 inches. Skull unusually thick; diploe congested and the small vessels of the inner table enlarged. Dura mater slightly adherent to the calvaria.

Brain: Weight, 35 ounces. Slight opacity of pia arachnoid, but no adhesion to cortex. The convolutions were shrunken over the greater part of the brain. The cortex was darker than usual, and the perivascular spaces were visible to the naked eye, and crooked vessels could be seen lying within them. The puncta vasculosa were quite distinct. The ventricles were enlarged, and the ependyma of the fourth was faintly granulated.



Lungs: Bronchitis with fetid secretion, and a small center of gangrene near the root of right lung.

The uterus was anteflexed and bound down by adhesions, and the ovaries were cystic and misplaced.

Other organs appeared normal to naked eye.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was beset with nuclei, especially near the vessels. The vessels were extensively diseased; their walls were thickened greatly by cell growth, and many were very tortuous and distorted, and thrombi and recent fibrinous coagula were found. The perivascular spaces were enlarged to many times the diameter of the contained vessels, and the spaces were filled with cells, pigment, granular material, and red blood-cells. Many small hemorrhages were found. A few vessels had thickened glassy walls. Within the fibrous outer layer of the cortex were many spider cells, and scattered through cortex and outer portion of the white substance were larger cells of the same nature. The nerve cells presented no very definite change, though many were found with yellow and granular protoplasm. The pericellular spaces were enlarged.

The vessels of cerebellum and medulla showed a mild degree of change, similar to those of the brain. No special alteration in the cells. Nothing unusual was observed in the spinal cord; the central canal was closed.

Lungs: Secondary pneumonia, due to gangrene.

Kidneys normal. Liver showed slight passive congestion. Spleen normal.

#### Case 267.

J. E.; aged 40; colored; laborer; nativity, United States. The patient was admitted when the dementia was far advanced, and the mental symptoms were therefore not characteristic. Glosso-labial paralysis and general inco-ordination were marked. The cause was unknown. The duration was about two years, and death was from exhaustion.

Autopsy, thirteen hours after death. Body well nourished; bed sores over sacrum, trochanters, and scapulæ.

Cranium: Antero-post diameter  $7\frac{1}{2}$  inches; transverse,  $5\frac{1}{4}$  inches. Skull unusually thin in the frontal regions, and several small exostoses were found on the inner surface of the frontal bone. Dura mater was slightly adherent in the frontal region.

Brain: Weight,  $37\frac{1}{2}$  ounces. Diffused opacity of pia arachnoid over its whole extent, and slight adhesion to the summits of the convolutions. The convolutions were much shrunk and the ventricles extremely dilated. The ependyma was very granular over its entire extent.

The right posterior cerebral artery was very small at its first part, before it was joined by the posterior communicating; the latter was enlarged, and furnished the main blood supply.

Lungs: Slight pleuritic adhesions and subpleural hemorrhages in posterior portions.

Heart: Dilatation and hypertrophy, and slight disease of aortic valves. Aorta atheromatous.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was thickened and its deeper layers infiltrated. The vessels of the brain retained their contents, and showed a slight increase of nuclei in walls and perivascular spaces. Some pigment along the vessels. The nerve cells were yellow and shrunk, and many were much disintegrated. The vessels of cerebellum, medulla, and cord were full of blood, and showed a few extra nuclei. The central canal was obliterated, and the spinal pia mater thickened.

Other organs showed nothing of interest.

#### Case 268.

P. B.; aged 35; single; soldier; nativity, Germany. This case was somewhat irregular in its course, but was, without doubt, paresis. The symptoms were progressive dementia, mental exaltation, glosso-labial paralysis, ataxic gait, and finally bulbar paralysis occurred. The cause was sunstroke, and the duration one year.

Autopsy, five hours after death. Body well nourished; bed sores over sacrum.

Cranium: Antero-posterior diameter,  $7\frac{1}{4}$  inches; transverse, 6 inches. Skull elliptical in outline. The depressions corresponding to the upper ends of the central convolutions were unusually distinct. Dura mater normal.



Brain : Weight, 43½ ounces. Opacity of pia arachnoid over the greater portion of the convexity, but less decided over the occipital lobes. The convolutions were shrunk and slightly indurated in the fronto-parietal regions and the anterior extremities of the temporal lobes. The ventricles were enlarged and the ependyma granulated. The cortex was thin in the atrophied regions; some of the perivascular spaces visible to the naked eye, and the puncta vasculosa were moderately distinct.

The right vertebral artery was very small, the posterior cerebral of the same side also small at its first part, and the right posterior communicating was large and furnished the main blood supply to this part of the brain. The right anterior cerebral artery was very small at its origin, and received its blood supply mainly through a dilated anterior communicating artery.

Lungs : The mottled appearance and irregular solidification of broncho-pneumonia. Other organs presented nothing remarkable.

#### MICROSCOPICAL EXAMINATION.

Brain : The pia mater was infiltrated with nuclei, blood cells, and yellow pigment. The vessels of the brain showed a great accumulation of nuclei, or leucocytes, in their walls and perivascular spaces. The perivascular spaces were greatly enlarged, the vessels tortuous, and some small hemorrhages were found.

The outer layer of the cortex was coarsely fibrous, and contained many spider-shaped cells, and these were also found scattered through other parts of the cortex and subjacent white substance.

The nerve cells did not show decided changes; a few were yellow and granular, but in many the disease had left no visible alteration.

All parts of the cerebrum were affected, but the occipital lobes were less so than the anterior portions.

The vessels of the cerebellum and medulla showed a slight degree of nuclear proliferation, and the nerve cells of the latter were slightly yellow and granular. The spinal cord presented nothing unusual, except dilated perivascular and other lymph spaces.

The lungs showed the microscopical appearance of catarrhal or broncho-pneumonia, with hemorrhagic exudate.

The liver showed slight passive congestion.

#### Case 270.

J. S.; aged 45; married; soldier; nativity, Germany. This was a typical case of paresis, terminating in death from exhaustion and maniacal excitement. The cause given was injury to head, and the duration was nine months.

Autopsy, twenty-four hours after death. Body emaciated.

Cranium : Antero-posterior diameter 7 inches; transverse, 5½ inches. The frontal suture was present, otherwise the skull was normal. Dura mater thickened, but not adherent to the bone.

Brain : Weight, 45¼ ounces. Diffused opacity of pia arachnoid over almost the whole brain, but more decided over the fronto-parietal regions. The convolutions were shrunk; the consistence of the brain substance reduced. Adhesion and decortication over the whole cerebrum, and interlobar adhesions of frontal regions. The ventricles slightly enlarged; the ependyma smooth. Perivascular spaces visible to naked eye; cortex darker than normal.

Lungs : Hypostatic congestion, pleuritic adhesions, and small subpleural hemorrhages.

Atrophy and slight valvular disease of the heart.

The liver, spleen, and kidneys showed passive congestion and its effects.

#### MICROSCOPICAL EXAMINATION.

Brain : The pia mater showed great infiltration, with nuclei, red blood-cells and pigment. The vessels of the brain were full of blood, and small hemorrhages into the perivascular spaces were found. The coats of the vessels were thickened by proliferation of nuclei, and their perivascular spaces were enlarged, and contained great accumulations of cells and pigment. A few small spider-cells were found in the outer layer of the cortex, and scattered through other parts of cortex and white substance.

The nerve cells, of all sizes, were more or less yellow, granular, and shrunk. In the hippocampal region the cell degeneration was particularly noticeable. The pericellular spaces were enlarged.

The vessels of the cerebellum were congested, but nothing else was abnormal.



The medulla was congested; the cells yellow, granular, and disintegrated.

The connective tissue of the cord was coarser than usual, and some of the ganglionic cells opaque and the nuclei obscured. The central canal of the cord was closed.

The naked eye appearances of the other organs were confirmed.

### Case 283.

R. D.; aged 49; married; clerk, U. S. A.; nativity, United States. This case was irregular, and the diagnosis was uncertain. The disease had existed at least eighteen months when admitted, and the dementia was far advanced. Sub-acute maniacal attacks were experienced, and there was slight general ataxia. The cause was supposed to be specific. The disease terminated by œdema of lungs and heart disease after a duration of two years and four months.

Autopsy, sixteen hours after death. Body well nourished.

Cranium: Antero-posterior diameter,  $7\frac{1}{8}$  inches; transverse,  $5\frac{3}{8}$  inches. The depressions for the convolutions were unusually well marked, and the diploe was congested. The dura mater was adherent at the vertex.

Brain: Weight,  $43\frac{1}{2}$  ounces. The pia arachnoid was opaque over the anterior and middle regions; over the basal and occipital regions it seemed normal. The brain was flabby, and sank with its own weight, and there was moderate atrophy of the convolutions corresponding in extent to the disease of the membranes. The ventricles were moderately enlarged, and the lining was faintly granulated in the fourth. Vessels of the base showed a few patches of opacity, but no obstruction of the lumen. Other parts of the brain presented nothing unusual.

Lungs, œdematous, and the bronchi inflamed. Valvular disease of the heart, with hypertrophy and dilatation. Aorta corrugated and atheromatous. Other organs presented normal appearances.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was thickened, and nuclei were very numerous in the vicinity of the vessels. There was a moderate increase of nuclei in the walls of the blood-vessels of the cortex. The perivascular spaces were enlarged, and a few leucocytes and pigment granules were found within them.

Some small branched cells were seen in the outer layer of the cortex, but few were found elsewhere. The nerve-cells were yellow, granular, and some were slightly disintegrated at their margins.

In the cerebellum no decided change was found.

The vessels of the medulla showed traces of nuclear growth, and a few of the ganglionic bodies were filled with brownish granules, obscuring the nucleus. The spinal cord showed nothing unusual; the central canal was closed.

The microscopical study of the other organs confirmed the naked-eye diagnosis.

### Case 253.

J. G.; aged 50; single; sailor; nativity, United States. Though placed with the cases of paresis, the diagnosis was uncertain. The dementia was far advanced when he was admitted, and the diagnosis was based mainly upon the facial expression, and the paralysis which existed, and finally passed into general ataxia. The case was probably dementia, due to organic disease of the brain. The duration was about four years. The cause was believed to be specific disease.

Autopsy, thirty-three hours after death. Body well nourished.

Cranium: Antero-posterior diameter,  $7\frac{3}{8}$  inches; transverse,  $5\frac{3}{8}$  inches. Skull thick and dense, and the arterial depressions strongly marked. Vessels of dura full of blood.

Brain: Weight, 48 ounces. Pia arachnoid normal, not adherent to cortex. Slight atrophy of convolutions in the fronto-parietal regions. Atheroma of arteries of the base. Ventricles and ependyma normal. On section a large softening was found in the left hemisphere, involving the posterior portion of caudate nucleus, internal capsule, and lenticular nucleus. The brain substance was mottled, with reddish areas.

Lungs: Slight pleuritic adhesions and hypostasis.

Heart: Moderate thickening of valves of left side.

Liver: Slight passive congestion and contraction.

Kidneys: Interstitial nephritis.

Spleen: Increase of fibrous tissue.

#### MICROSCOPICAL EXAMINATION.

Brain: No disease of pia mater. Vessels of brain were filled with blood, and a few extra nuclei were found in their vicinity. Some capillary hemorrhages were found, the blood filling the perivascular spaces, and thus proving an enlargement which



must have existed during life. The nerve cells were well preserved, especially in certain regions. A few were yellow and granular. In the cerebellum, medulla, and cord, nothing was abnormal, except unusual fullness of the vessels and a few granular cells in the medulla. The central canal of the spinal cord obliterated.

Of the other organs the diagnosis was confirmed.

### Case 285.

H. R.; aged 40; colored; married; laborer; nativity, United States. This case was recognized as one of post-apoplectic dementia with hemiplegia, but as the symptoms were somewhat similar to those of paresis, and the microscopical appearances have a certain histological relation, the case has been placed with those of paresis, but is not included in the summary. The patient had a history of intemperate habits, but the insanity was caused by a cerebral hemorrhage, followed by abscess, ependymitis, and arachnitis. The duration was fifteen months, and death was caused by a second hemorrhage.

Autopsy, six hours after death: Body well nourished.

Cranium: Antero-posterior diameter,  $7\frac{1}{2}$  inches; transverse,  $5\frac{1}{2}$  inches. Skull, thin; internal surface of dura and the surface of the arachnoid sticky from slight exudate.

Brain: Weight, 55 ounces. Pia arachnoid seemed normal, except the basal portion, where the arachnoid was opaque and the fluid beneath it sero-purulent.

The convolutions were flattened and the brain was swollen. Arteries at the base atheromatous.

The ventricles were dilated, filled with sero-purulent fluid, and the ependyma was faintly granulated.

The inflammation had extended by continuity from a small abscess, which was situated near the wall of the ventricle, opposite the optic thalamus. The abscess had originated in the cicatrix of a hemorrhage, which was situated in this region, above the level of the basal ganglia. On the right side was a large recent hemorrhage into the optic thalamus. The brain tissue was soft, the internal parts almost diffuent.

Lungs, hypostatic; heart, hypertrophied. Other organs showed nothing important.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was not diseased, except slightly over the seat of the hemorrhagic cicatrix. The brain in general showed but little alteration. The vessels had some pigment granules around them, but there was little indication of disease. A few nerve cells were yellow and granular, but the majority showed nothing abnormal.

In the vicinity of the inflammatory center, and in all sections which bordered upon the ventricles, very decided changes were found. The vessels were thickly coated with nuclei, and the brain tissue infiltrated in the vicinity. Spider cells were found in this region and beneath the inflamed ependyma. At the seat of the hemorrhage abundance of yellow blood pigment was found, and around the abscess the small cell proliferation, large granular cells, and other signs of acute inflammation of the brain substance.

Nothing abnormal was found in the cerebellum.

The pia mater of the medulla showed signs of inflammatory cell proliferation, and the vessels of the nerve substance showed proliferation of nuclei within their walls, and perivascular spaces.

The pia mater of the cervical cord was inflamed, thickened, and adherent. The central canal of the cord was obliterated. The nerve cells of medulla and spinal cord showed nothing unusual.

The histological appearances of the other organs corresponded with the naked-eye diagnosis.

### Case 300.

T. S.; aged, 68; single; soldier; nativity, United States. This case was probably dementia following hæmatoma of the dura mater, but was placed with the paretic cases for the same reason as the last. The case was of 6 months' standing when admitted, and the diagnosis was difficult. He had some expansive delusions, the facial expression resembled that of paresis, there was some paralysis, and finally death from bulbar paralysis. The cause of the hæmatoma was unknown. Duration of the disease, about one year and nine months.

Autopsy, twenty-four hours after death: Body emaciated.

Cranium: The cranial diameters were omitted, but were not unusual. The skull was a little thicker than usual; the arterial depressions were very distinct and some absorption of the bone had taken place along these channels. The dura mater was



decidedly thickened, and on its inner surface was found a bulky layer of new formation covering the whole convexity, the middle cerebral fossæ, and the anterior cerebral fossæ, embedding within it the olfactory tracts and other nerve trunks. The falx was covered by a thinner membrane; the tentorium and cerebellar portion were free from disease.

The false membrane was in some places  $\frac{1}{2}$  of an inch thick, and could be separated into several thick layers, between which was serum, and a thin inner layer under which was liquid blood.

Brain: Weight,  $31\frac{3}{4}$  ounces. The brain was much compressed by the hæmatoma, and small areas of adhesion between pia arachnoid and dura were found. The pia mater was somewhat opaque and seemed to adhere slightly to the cortex. The convolutions were shrunk, as were also pons and medulla. The ventricles were dilated and the ependyma very granular in the fourth. The cortex was reddened and the puncta vasculosa prominent in the posterior parts of the brain. The consistence was much reduced.

The lungs were hypostatic and presented small light areas of solidification supposed to be inhaled muco-purulent secretion from the bronchial tubes. Chronic bronchitis with bronchiectasis was present.

Liver: The upper surface was adherent to the diaphragm.

Spleen: Cartilaginous thickening of capsule.

Other organs normal.

#### MICROSCOPICAL EXAMINATION.

Brain: The vessels of membranes and brain were filled with blood, and there was some proliferation of nuclei. The perivascular spaces were somewhat larger than usual, and a few cells, blood, and pigment were found within them. A few small vessels were extremely tortuous, forming complete loops within the perivascular spaces. The nerve cells were considerably degenerated; some were yellow and shrunken, and others were normal in size, but granular and disintegrated at their margins.

In the medulla a few small degenerated cells and granulations of the ependyma.

The cord showed a few granular, yellow-tinted cells, and the central canal was open.

The other organs were as described above.

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## PART II.

### Case 18.

B. F.; aged 54; colored; married; huckster; nativity, United States. This case of acute mania was of uncertain duration and no cause could be assigned, as there was no history previous to admission. The cause of death was exhaustion.

Autopsy, twenty-five hours after death: Body well nourished; bed-sore over sacrum.

Cranium: Antero-posterior diameter, 7 inches; transverse,  $5\frac{1}{2}$  inches. Skull, normal; dura mater, slightly adherent to the bone, and the falx to the pia mater.

Brain: Weight,  $44\frac{1}{2}$  ounces. Pia arachnoid of the convexity and the arachnoid at the base, slightly opaque.

The lining of the ventricles was granulated; otherwise nothing unusual was observed on section of the brain.

Lungs, emphysematous.

Slight valvular disease of the heart.

Spleen, atrophied; liver, normal.

Slight interstitial change in the kidneys.

#### MICROSCOPICAL EXAMINATION.

Brain: The examination of the brain was almost negative. The membranes were slightly thickened and in the lower layer of the pia mater were a few extra nuclei. The blood vessels of the brain were not diseased; many contained blood, and within the perivascular spaces a little pigment was found.

The nerve cells showed some deepening of the normal yellowish tint of the cell body and some of the smaller cells were unusually pigmented. The larger ganglionic bodies contained larger accumulations of yellow granules than usual.

The other portions of the brain showed nothing unusual.

The naked-eye diagnosis of the other organs was confirmed.



## Case 53.

S. S.; aged 41; colored; single; laborer; nativity, United States. A case of acute mania passing into terminal dementia. The cause given was intemperance. The duration was fourteen months. Death was caused by rupture of the endocardium of the right auricle.

Autopsy, four hours after death: Body well nourished.

Cranium: Antero-posterior diameter,  $6\frac{7}{8}$  inches; transverse,  $5\frac{1}{2}$  inches. Skull small but not diseased; dura mater slightly adherent at the vertex.

Brain: Weight,  $44\frac{1}{2}$  ounces; membranes and brain substance pale; nothing abnormal was observed about the brain except congestion of the vessels of the fourth ventricle.

Lungs: Œdema; chronic bronchitis; thrombosis of pulmonary artery.

Heart: The cavities of the right side were dilated and distended with blood, and rupture of the endocardium of the right auricle had occurred. Slight hypertrophy, and slight thickening of valves of left side.

Other organs normal.

## MICROSCOPICAL EXAMINATION.

Brain: The membranes were not diseased, and the blood-vessels were normal except a few, which were tortuous and looped.

The nerve cells were almost normal in appearance. Some were slightly more yellowish than normal, and the large ganglionic elements were unusually pigmented. The pericellular spaces were small. A few extra nuclei were seen along the line of the vessels, and a few granules of pigment were found.

In the medulla oblongata some perivascular hemorrhages were found, and a few of the nerve cells were yellow and shrunken, probably normal retrogression.

## Case 117.

M. W.; aged 34; single; soldier; nativity, Ireland. The cause given for this case was phthisis and the duration was not exactly known. The mental disease was passing into terminal dementia.

Autopsy, twelve hours after death. Body emaciated.

Abscess in left inguinal region.

Cranium: Antero-posterior diameter,  $7\frac{5}{8}$  inches; transverse,  $5\frac{3}{8}$  inches. Skull normal. Internal pachymeningitis of an early stage over both sides of the dura.

Brain: Weight, 48 ounces. Pia arachnoid normal. Convolutions slightly shrunken; otherwise the brain seemed normal.

Lungs: Extensive tubercular disease.

Heart: Pericarditis, with effusion.

Liver, spleen, and kidneys amyloid, and the left kidney was the seat of tubercular pyelo-nephritis.

The left testicle had a small tubercular abscess.

The left ureter had ulcerated through at its lower end, and by this channel the pus from the kidney had reached the groin.

## MICROSCOPICAL EXAMINATION.

Brain: There was no disease of the cerebral vessels, but a few additional nuclei were seen in the brain substance along the line of some of the vessels.

Some of the nerve cells seemed a deeper yellow tint than normal and a few were evidently shrunken, but great numbers of cells appeared perfectly normal.

The nerve cells of the medulla more yellow than usual. The central canal of the spinal cord was closed.

The microscope confirmed the appearances of the other organs given above.

## Case 118.

W. D.; aged 25; colored; single; laborer; nativity, United States. A case of acute mania, passing into dementia. The cause was phthisis, and death was caused by perforation of the bowel by a tubercular ulcer. The duration was six months.

Autopsy, three hours after death. Body emaciated.

Cranium: Antero-posterior diameter  $7\frac{1}{4}$  inches; transverse,  $5\frac{1}{8}$  inches. Dura mater, normal.

Brain: Weight,  $37\frac{1}{2}$  ounces. Pia arachnoid œdematous and a slight hemorrhagic effusion on right side of convexity. Slight general shrinkage of convolutions, otherwise nothing abnormal was observed in the brain.

Lungs: Tuberculosis, and tubercular pleuritis of both sides.

Heart normal; but almost all the other organs were tubercular. Perforation had occurred in the lower part of the ilium.

#### MICROSCOPICAL EXAMINATION.

Brain: The organ was not properly hardened, but it presented nothing unusual.

### Case 137.

F. B.; aged 35; married; laborer; nativity, United States. This case of acute mania was supposed to be due to intemperance. The duration was eighteen months, and the disease was passing into dementia. The cause of death was typho-malarial fever, with cystitis.

Autopsy, twelve hours after death. Body fairly well nourished.

Cranium: Antero-posterior diameter  $7\frac{1}{4}$  inches; transverse,  $5\frac{5}{8}$  inches. Skull thick and dense. Dura mater normal.

Brain: Weight,  $52\frac{3}{4}$  ounces. Some opacity of pia arachnoid, more noticeable on left side. Slight shrinkage of convolutions of fronto-parietal regions. Arteries at the base showed slight thickening at the carotid portions.

Lungs, heart, liver, spleen, and kidneys exhibited nothing abnormal.

Urinary bladder inflamed.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater and a few of the cerebral blood-vessels showed a slight increase of nuclei. The perivascular spaces were, in some instances, enlarged, and a few free cells and clumps of yellow pigment were found within them.

The nerve cells in general were but little altered. There was a slight deepening of the normal faint yellow tint of the cells, and some were found decidedly yellow, attenuated, and the nuclei stained darker than usual.

A few yellow and granular cells were found in the medulla oblongata.

The spinal cord was normal; central canal closed.

### Case 150.

J. N.; aged 48; married; publisher; nativity, United States. This was a case of acute mania caused by syphilis and the subsequent excessive use of opium and alcohol. The duration was two months, and death was from exhaustion and inanition.

Autopsy, twelve hours after death. Skin jaundiced; scars over tibial regions; body emaciated.

Cranium: Skull was not measured, but was normal in dimensions. Slight internal pachymeningitis.

Brain: Weight,  $45\frac{1}{4}$  ounces; pia arachnoid normal; slight shrinkage of the convolutions in the fronto-parietal regions. Ependyma faintly granulated.

Lungs normal. Slight hypertrophy and dilatation of heart.

Slight contraction of kidneys.

Liver normal. Gall bladder contained small calculi, but the ducts were pervious.

Enlargement of the spleen; weight, 5 pounds  $14\frac{1}{2}$  ounces.

#### MICROSCOPICAL EXAMINATION.

Brain: The examination was almost negative. The blood-vessels were normal, and the nerve cells showed nothing but a slight deepening of the yellowish tint of the cell bodies, and perhaps some attenuation of some of the medium-sized cells. Nothing abnormal was found in the medulla except small granulations in the fourth ventricle. The spinal cord was normal; the central canal closed.

### Case 191.

G. W.; aged 51; married; laborer; nativity, Scotland.

This was a case of acute mania of the most violent type, ending in complete mental and physical exhaustion after a duration of three months. The cause given was "business troubles."

Autopsy, nineteen hours after death. Body greatly emaciated. Othæmatoma of left ear.



Cranium: Antero-posterior diameter,  $7\frac{1}{4}$  inches; transverse,  $5\frac{5}{8}$  inches. Skull normal, dura mater slightly adherent to the bone.

Brain: Weight, 56 ounces. Slight opacity of pia arachnoid, and adhesions to the dura along the great longitudinal fissure. Veins of pia mater engorged; arteries of the base normal. Moderate shrinkage of the convolutions, and a softened condition of the brain substance, due in part to decomposition. Ventricles and ependyma normal.

Lungs: Tubercular and hypostatic.

Heart: Slight thickening of valves.

Kidneys: Moderate degree of interstitial change.

Other organs normal to naked eye.

#### MICROSCOPICAL EXAMINATION.

Brain: The brain tissue was somewhat altered by decomposition. Very little was found to account for the intense mental derangement.

The vessels, even the smallest capillaries, were full of blood; otherwise, nothing unusual was found in the vessels themselves. A little pigment was found in the perivascular spaces.

The nerve cells were more yellow than normal, and many were granular and their margins wasted. The large ganglionic elements in the motor region were unusually pigmented.

Nothing special was found in other parts of the cerebro-spinal system.

The lungs, and other organs, corresponded with the diagnosis made by the naked eye.

#### Case 241.

W. B.; aged 19; colored; single; laborer; nativity, United States. This was a case of acute mania of three months' duration, attributed to ill health. The lesions of the intestines found at the autopsy were supposed to be those of typhoid fever, the disease being masked by the active maniacal symptoms. Death was caused by hemorrhage from the bowels.

Autopsy, twelve hours after death. Body well nourished.

Cranium: Antero-posterior diameter  $6\frac{5}{8}$  inches; transverse,  $5\frac{5}{8}$  inches. Skull and dura mater normal.

Brain: Weight, 43 ounces. General appearance of the brain normal.

Nothing of importance was observed in any of the organs, except extensive ulceration of the lower end of the ilium.

#### MICROSCOPICAL EXAMINATION.

Brain: The organ was remarkable for the absence of signs of disease. The vessels were perfectly normal, and but few were filled with blood. The perivascular and pericellular spaces were small. The nerve cells were perfectly shaped, of a very faint yellowish-pink color, in carmine-stained sections, and the nuclei were well stained. The cells generally lay within small pericellular spaces, and sometimes from one to several nuclei were found in with the nerve cell. (This is also found in normal brains, and is a proof that the pericellular spaces are not of artificial origin.)

Yellow pigment, which is commonly found in the large cells of the motor regions, was in this brain very small in quantity, some of the cells being perfectly free from it.

In the medulla a few yellow shrunken cells were found, probably in the process of physiological retrogression.

The spinal cord was normal; the central canal was obliterated.

#### Case 5.

G. F.; aged 60; colored; married; plasterer; nativity, United States. This case was one with acute maniacal symptoms and right hemiplegia. The duration was three months. No history was obtained and the cause was unknown. The autopsy revealed hæmatoma of the dura mater with pressure, greatest on the *left* side, and extensive disease of membranes, cerebral vessels, and nerve cells. It is probable that the same causes which led to the pachymeningitis, produced their effects upon the brain structure. Though the lesions were almost identical with those so frequently found in general paralysis, there was no clinical resemblance during the patient's residence in the hospital.

Autopsy, seventeen hours after death. Body well nourished.

Cranium: Antero-posterior diameter  $7\frac{1}{4}$  inches; transverse 5 inches. Skull normal; dura mater adherent to the bone. A large hæmatoma occupied the right side of the



dura mater and a recent false membrane with large extravasations beneath it covered the left side. Pressure was greatest upon the *left* side, shown by the flattening of the convolutions against the skull bone. The cyst of the hæmatoma was very large, and contained semi-fluid blood, and the walls were covered by a shreddy, brown deposit of fibrin.

Brain: Weight 40 ounces. The pia arachnoid was opaque, and the median surfaces were adherent over the corpus callosum. Arteries of the base atheromatous. The convolutions were shrunken in the frontal regions; the ventricles were dilated and the ependyma was granulated.

Lungs: Chronic pleuritic adhesions; anthracosis; hypostatic congestion, and a few calcareous nodules.

Heart: Slight valvular thickening and atheroma of the aorta.

Kidneys: Slight interstitial nephritis.

Other organs appeared normal.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was moderately infiltrated with nuclei and was thickened.

Many of the vessels of the cortex, and, to a less degree, those of the white substance, were decidedly diseased. They were thickly beset with nuclei, were often tortuous, and their perivascular spaces contained free cells and clumps of pigment. The vessels were generally filled with blood, and a few hemorrhages were found. An increase of nuclei in the brain tissue in the vicinity of the vessels was a common appearance.

The nerve-cells were yellow and granular, and many showed some disintegration of their margins. The pericellular spaces were large.

The outer layer of the cortex contained a few small branched cells, but none were detected elsewhere.

The nerve-cells of the medulla contained clumps of yellow pigment, and a few were found totally converted into brownish granules. The vessels were in a condition similar to those of the brain.

The spinal cord showed nothing unusual, except an open central canal, with the lining thrown into folds. The other organs were as described above.

### Case 165.

E. J.; aged 50; colored; married; laborer; nativity, United States. No history of this case could be procured, except that he had been maniacal. During his stay in the hospital he was almost completely paralyzed in mind and body. He was but one week in the hospital, when he died from exhaustion. The exact nature of the mental disease could not be determined; but it was found to have been the manifestation of grave cerebral lesions.

Autopsy, six hours after death. Body well nourished; large bald patch, with cicatrization of the skin, on left side of head; apparently the result of a burn or scald.

Cranium: Antero-posterior diameter,  $7\frac{1}{2}$  inches; transverse,  $5\frac{5}{8}$  inches. Skull, asymmetrical; internal pachymeningitis of cerebellar fossæ.

Brain: Weight, 38 ounces. Pia arachnoid opaque over the whole convexity, and thickened along the great longitudinal sinus; arachnoid of the base, opaque; arteries normal; no adhesion of membranes to cortex; slight shrinkage of convolutions and atrophy of cortex; ventricles dilated, and their lining very granular.

Lungs: Pleuritic adhesions and a patchy exudate, probably inhaled from the bronchi.

Heart: Slight thickening of auriculo-ventricular valves.

Spleen: Atrophy and fibrous change.

Kidneys: Slight interstitial nephritis.

Other organs normal.

#### MICROSCOPICAL EXAMINATION.

Brain: The pia mater was thickened and infiltrated with nuclei, and the cerebral vessels of both cortex and white substance showed nuclear growth in their walls and perivascular spaces. Some of the vessels contained thrombi.

A few spider cells were found in the first layer of the cortex, and the neuroglia cells seemed swollen. The nerve-cells were yellow and granular, and the pericellular spaces were enlarged.

The pia mater of the medulla was infiltrated and the vessels showed a slight increase of nuclei. Many cells contained clumps of coarse yellow granules, and in a few



the nuclei were obscured. The ependyma of the fourth ventricle was granulated. A few of the nerve cells of the spinal cord were yellow and their nuclei were obscured. The central canal was closed.

Other organs were as described above.

### Case 185.

J. E. G. ; aged 49 ; colored ; married ; laborer ; nativity, United States. This case was in the hospital but a short time and the diagnosis was uncertain. The most prominent symptom was maniacal excitement, and for this reason it was recorded as acute mania. The cause given was intemperance, and the duration was about one month. The microscopical examination revealed grave organic disease of the brain, differing in no respect from that found in general paralysis of the insane.

Autopsy, five hours after death. Body well nourished.

Cranium : Antero-posterior diameter  $7\frac{1}{2}$  inches ; transverse,  $5\frac{3}{4}$  inches. Skull and dura mater normal.

Brain : Weight,  $47\frac{1}{2}$  ounces. Pia arachnoid slightly opaque. Convolutions were but slightly shrunken ; the consistence of the brain firmer than usual. Ventricles slightly dilated and the ependyma was smooth. Vessels at the base normal.

Lungs : Chronic pleuritic adhesions and hypostatic congestion of posterior portions.

Heart : Slight valvular disease of left side, and some atrophy of the organ.

The kidneys showed passive congestion. Other organs normal.

### MICROSCOPICAL EXAMINATION.

Brain : The pia mater showed great increase of nuclei in the vicinity of the vessels and in the sulci. The cerebral vessels of all kinds showed nuclear proliferation and thickening of their walls, and the perivascular spaces were enlarged and contained free cells, pigment granules, and extravasated blood. Some of the vessels were tortuous and distorted, and a few were found almost obliterated by growth of cells.

A large number of spider cells were found in the outer layer of the cortex of the gyrus fornicatus, and others were found scattered throughout the cortex elsewhere.

Many nerve cells were yellow and attenuated, and their nuclei stained deeper than usual ; many were found with granular disintegrating cell bodies, but the nuclei seemed normal. Some cells presented a perfectly normal appearance. The pericellular spaces were not abnormally large.

In the medulla the vessels showed proliferation of nuclei in their walls and free cells in the perivascular spaces. A few small hemorrhages were found within the perivascular spaces.

Many of the nerve cells of the medulla were yellow and opaque, and a number of completely degenerated cells were found. The vessels of the spinal cord were in the same condition as those of the medulla, and the nerve cells presented similar changes. The central canal was obliterated.

The appearances of the other organs were not important.

### SUMMARY.

In the foregoing study the number of cases of each form of mental disease is too small to form the basis of any general conclusions. The work was undertaken rather as a study of individual cases, grouping together those with somewhat similar clinical manifestations. For this reason three cases of acute organic dementia with paralytic symptoms (cases 253, 285, 300) have been placed with the cases of general paralysis, and three cases of acute insanity with maniacal symptoms, dependent upon organic cerebral disease (cases 5, 165, 185), have been studied with the cases of acute mania. It was hoped that some additional interest might be secured by this comparative method of study, especially in regard to the two main groups.

In the study of a number of cases of a disease with a well-defined morbid anatomy, repetition is unavoidable ; but it was thought that minor differences would be of sufficient interest to make this permissible.

In all the cases of general paralysis characteristic gross lesions were found. Of the less common conditions, slight abnormality of the skull was found in several cases ; adhesion of dura mater to the bone in four, and inflammation of its internal surface of various degrees in five cases.

The pia mater and arachnoid showed changes in all the cases ; but in order to preserve the brain better for microscopical study, the membranes were never entirely removed ; therefore reference to the adhesion or non-adhesion of the membranes applies only to the portion examined.

The heaviest brain of the parietic cases weighed  $47\frac{1}{2}$  ounces ; the lightest, 30 ounces. The average weight of the fifteen cases was  $41\frac{9}{10}$  ounces.

The few lesions found in the cases of acute mania were mainly evidences of cere-

bral irritation and vascular disturbances. As several of these cases were without history the known causes of such conditions may be considered. Intemperance, sun-stroke, and syphilis probably leave their traces upon the brain, but as yet these are indefinite, and not well studied.

The heaviest brain of the eight cases of acute mania weighed 56 ounces; the lightest weighed 37½ ounces; the average weight was 46½ ounces, a much greater average than in the cases of paresis.

The cases of organic dementia and mania require no special mention.

As a rule the microscopical appearances have been recorded without comment, but with the recognition of disputed points in cerebral pathology; and knowing that the greatest care is requisite to avoid accidental changes in the tissues during their preparation for the microscope, the writer has personally conducted every step of the process.

The tissues were as a rule stained in bulk before cutting the sections, and when prepared by the usual interstitial imbedding methods and fixed to the slide before removing the imbedding material, it is believed that the least possible displacement of the elements is secured.

The various preparations of carmine have been found to be the most useful staining agents.

The foregoing report is respectfully submitted to the Superintendent.

I. W. BLACKBURN, M. D.,  
*Special Pathologist.*

GOVERNMENT HOSPITAL FOR THE INSANE, *August 15, 1889.*

NOTE.—During the year 67 post-mortem examinations were made, but the above cases were selected from the records as the subject of a special study.



## APPENDIX B.

NO. 207 A STREET, SOUTHEAST, WASHINGTON, D. C., *April 1, 1889.*

SIR: I have the honor to present herewith a summary of dental work performed at the hospital. In consequence of a more systematic arrangement more has been accomplished in a given time:

Number of patients for whom teeth have been filled during year ending March 31, 1889 .....	100
Number of teeth filled during year ending March 31, 1889 .....	385
Total number of patients for whom teeth have been filled during period from June 1, 1886, to March 31, 1889 .....	191
Total number of teeth filled during the period from June 1, 1886, to March 31, 1889 .....	777

During the past year considerable progress has been made in examining the teeth of patients, other than those actually suffering. In two of the wards all have been put in reasonably good condition, except those of a few patients who refused to have anything done. We are now going through the third ward.

Precedence is always given to cases of actual suffering and to necessary extraction.

In the wards that I have visited, the patients—many of whom are of foreign birth—have, as a rule, strong, but sadly neglected, teeth. A very few cleanse the teeth daily. It would be desirable if more could be induced to do so, as contributing, not only to the preservation of teeth and gums, but to the general health. Every one must appreciate the difficulty of accomplishing this, and the extra care of the attendants which it would involve.

Very respectfully,

J. V. CALNER, D. D. S.

Dr. W. W. GODDING,  
*Superintendent.*

